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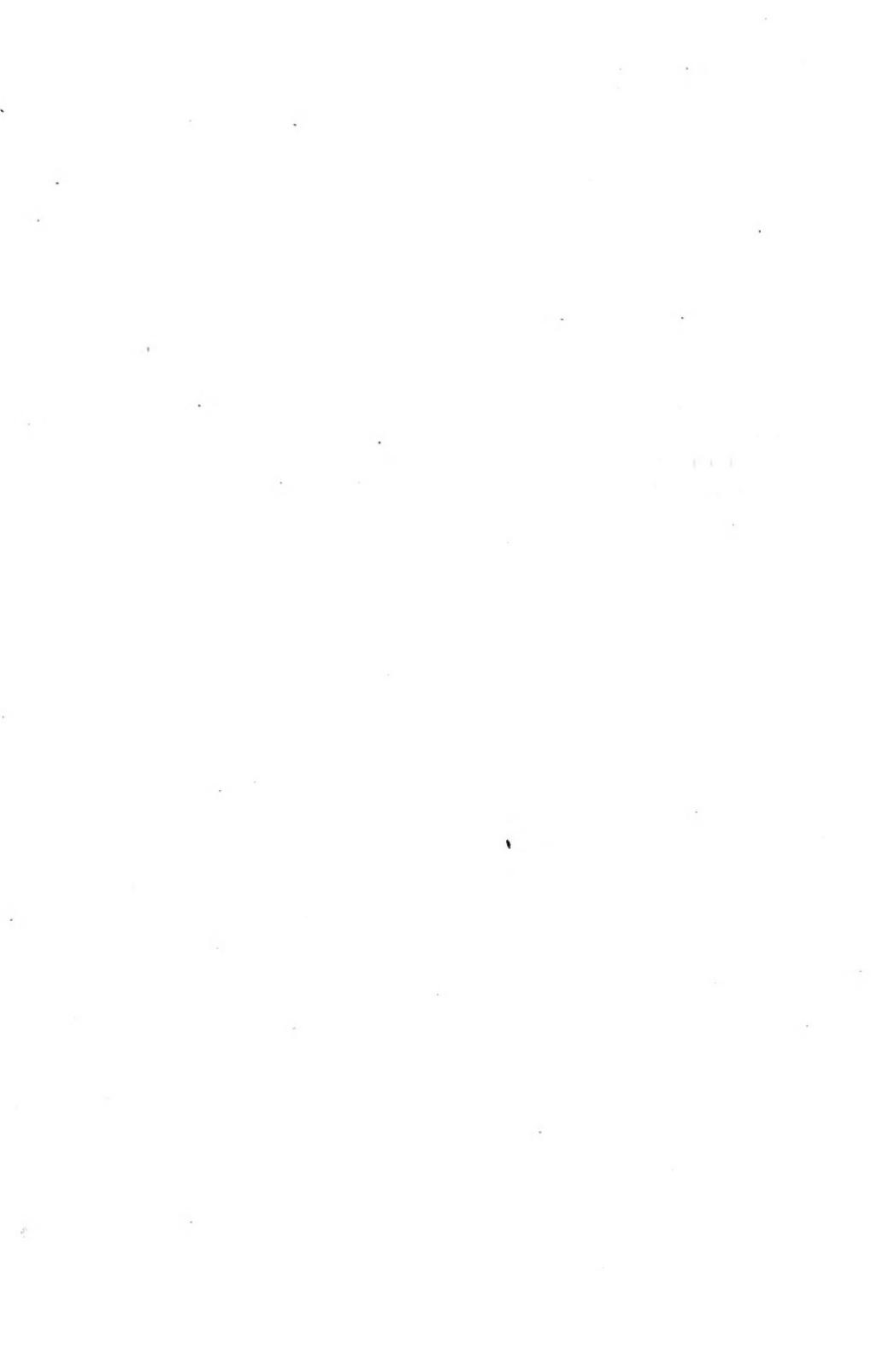
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MASSACHUSETTS
CROP REPORT.

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Corn selection for seed and show.

Asparagus growing.

Alfalfa in Massachusetts.

Celery growing.

Quince culture.

Grape culture.

MASSACHUSETTS CROP REPORT

FOR THE

MONTH OF MAY, 1910.

CORN SELECTION FOR SEED AND SHOW.

*ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.*

J. LEWIS ELLSWORTH, *Secretary.*

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CROP REPORT FOR THE MONTH OF MAY, 1910.

OFFICE OF STATE BOARD OF AGRICULTURE,
BOSTON, MASS., June 1, 1910.

With this bulletin the series of crop reports issued by this Board begins for the twenty-third year. No marked changes in the form of the bulletin are proposed, and the issues will contain information as to crop conditions in Massachusetts and throughout the United States, weather conditions, particularly as affecting crops, and special articles of timely interest. Suggestions as to possible improvements in the form and matter of the reports will be welcomed from our readers, and they are also invited to indicate any particular subject or subjects upon which they would like to see special articles.

The interest in corn growing has been increasing in New England of late years, mainly because of the high cost of grain and the feeling that farmers must do something to cut down their grain bills if they are to feed stock successfully. There will be a great corn show at Worcester, from November 7 to 12, inclusive, under the direction of a corporation organized for that purpose, and known as the New England Corn Exposition. This is the first show of the kind to be devoted entirely to corn ever held in New England, and it should have a far-reaching effect in encouraging the growing of this crop. With the idea of assisting our farmers to prepare for this exposition we have included in this bulletin an article on "Corn selection for seed and show," by Prof. Wm. D. Hurd, Secretary of the exposition, and Dean of Short Courses at the Massachusetts Agricultural College. He has prepared a very valuable and interesting article.

PROGRESS OF THE SEASON.

The Crop Reporting Board of the Bureau of Statistics, United States Department of Agriculture (Crop Reporter for May, 1910), estimates that the area of winter wheat was about 22,044,000 acres, or 714,000 acres (2.5 per cent.) more than the area harvested in 1909, and 4,439,000 acres (13.3 per cent) less than the area sown last fall. The average condition of winter wheat on May 1 was 82.1, compared with 80.8 on April 1, 83.5 on May 1, 1909, and 86.7, the average of the past ten years.

The average condition of rye on May 1 was 91.3, compared with 92.3 on April 1, 88.1 on May 1, 1909, and 86.7, the average for the past ten years.

The average condition of meadow (hay) lands on May 1 was 89.8, compared with 84.5 on May 1, 1909, and a ten-year average of 89.5.

The average condition of pastures on May 1 was 89.3, compared with 80.1 on May 1, 1909, and a ten-year average of 87.6.

Of spring plowing 80.3 per cent was completed up to May 1, compared with 64.1 per cent on May 1, 1909, and a ten-year average on May 1 of 66.

Of spring planting 65 per cent was completed up to May 1, compared with 51.9 per cent and 54.7 per cent on May 1, 1909 and 1908, respectively.

WEATHER SUMMARY, JAN. 1 TO MAY 1, 1910.

[FURNISHED BY WEATHER BUREAU, BOSTON.]

January: The weather of the month was stormy, even for the winter season, precipitation occurring on fifteen days, with monthly amounts near the average. The snowfall for the month ranged from 4 inches in coast sections to over 20 inches in interior sections. The temperature of the month was somewhat above normal, the average daily excess ranging from 2° to 5° . The lowest minimums were in the western sections, and were 17° below zero. The sunshine for the month was below average.

February: The weather of February was seasonal and

without special features. The precipitation was from normal to somewhat excessive, and well distributed throughout the month. The snowfall ranged from 1 inch at Provincetown to 30 inches in parts of Berkshire County. Precipitation occurred on thirteen days. The minimum temperatures ranged from 3° above zero to 15° below zero. The monthly mean temperature was generally in excess of the normal. There were twelve clear days.

March: The month was unusually mild, with temperatures much above the normal, generally between 6° and 7° , and no severe storms. In some localities the maximum temperatures during the last decade were above 75° , and the highest on record for March. The precipitation was generally less than 2 inches. At the close of the month rain was much needed, and the season was from ten days to a fortnight in advance of the normal. There was much more than the average amount of sunshine.

April: The month was much above the normal in temperature, from 4° to 6° , and one of the warmest of its name. The maximum temperatures occurred on the 6th and 7th, and ranged from 72° to 80° . The precipitation was well distributed through the month and over the State. There was somewhat more than the average amount of sunshine. The season at the close of the month was about two weeks earlier than usual.

TEMPERATURE AND RAINFALL FOR THE WHOLE COUNTRY.

[FROM UNITED STATES NATIONAL WEEKLY WEATHER BULLETIN.]

Week ending May 9. — The temperatures were generally below normal over the districts east of the Rocky Mountains, killing frosts occurring in many sections from the Missouri valley eastward to the interior of New England. West of the Rocky Mountains the mean temperature for the week was generally above the normal. Generous rains fell over the more easterly portions of the Great Plains region, and thence eastward over the middle Mississippi and Ohio valleys and generally over the Atlantic coast districts. Over much of the remaining districts the precipitation was below the normal, but by slight amounts.

Week ending May 16.—Temperatures were slightly above normal until the middle of the week, when an area of high pressure, with severe frosts, moved southward and eastward from Canada, and dominated the conditions for all districts east of the Rocky Mountains for the remainder of the week. The week closed with a marked drop in temperature from the northern Rockies westward to the Pacific coast, with temperatures at or below freezing and snowfall in the middle Rockies. For the week, as a whole, the precipitation was below the normal in nearly all districts, the deficiencies being most marked in the Gulf and Atlantic States, upper Mississippi valley, and Lake region.

Week ending May 23.—The mean temperature for the week was again below the normal over the districts between the Rocky and Appalachian Mountains, except in the Lake region, where there was a slight excess. During the early part of the week the weather was decidedly cool over New England and portions of the Middle Atlantic States. There were frequent and copious rains over most of the districts east of the Rocky Mountains. Over the east Gulf and Atlantic coast States the precipitation, though fairly generous in amount, was nevertheless below the average for the season. West of the Rocky Mountains the amounts were universally less than the average.

Week ending May 30.—The week opened with a continuation of cool weather over the great agricultural districts. A high barometric pressure moved slowly eastward, gradually displacing the showery, rainy weather previously, but accompanied by temperatures close to freezing. West of the Rocky Mountains the weather continued warm, the temperatures increasing with the advance of the week. Showery conditions moved eastward during the first two or three days of the week. Over the Rocky Mountain and Great Plains States generally clear weather prevailed, except for showers in some sections near the end of the week. Local showers prevailed from the Lake region eastward and southeastward to the Atlantic coast.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending May 9.—New England. Boston: Considerable cloudiness prevailed, with showers. More sunshine would be beneficial. Morning temperatures were low during the middle of the week. On the 6th minimum readings were 6° to 8° below freezing in the northern States and frost was general throughout New England.

Week ending May 16.—New England. Boston: Light showers fell the first of the week; the remainder was fair, but with considerable cloudiness. Temperatures were moderate, except that the nights were cool, frost forming in the interior of the northern portion at the close of the week.

Week ending May 23.—New England. Boston: There was considerable cloudy weather during the week. Temperatures were moderate and generally seasonal. Light showers occurred in all parts. Sunshine and higher temperatures are needed.

Week ending May 30.—New England. Boston: There was much cloudy weather during the week, with frequent showers, but the amounts were unevenly distributed. Temperatures were high the first of the week, but moderate otherwise. Sunshine is needed.

WEATHER OF MAY, 1910.

The weather of the month, generally speaking, was very unsettled, with an unusual prevalence of cloudiness, a marked deficiency in the rainfall, and monthly temperatures near the seasonal average. Notwithstanding the fact that showers fell on an average of twelve days, the monthly rainfall in nearly all sections was less than 50 per cent of the May average, and in some localities the deficiencies were from 60 to 70 per cent of the usual rainfall for this month. There was much fog, with moderate easterly winds in coast sections. The daily temperatures were without special features, there being no unusual extremes. Excepting in immediate coast sections, the maximum temperatures ranged well into the 80's, and they generally occurred on the 24th. The

temperatures were lowest on the 5th and 6th, at 40° or slightly below. As a whole, the month was slightly warmer than the average. There was a marked deficiency in the amount of sunshine. At the close of the month the season was from a week to ten days in advance of the average.

In the circular to correspondents, returnable May 25, the following questions were asked: —

1. How does the present season compare, agriculturally speaking, with a normal season?
2. What is the promise for pastures and mowings, and did fall seeding winter well?
3. How did the bloom of apples, pears, peaches, plums and small fruits compare with the bloom of former years, and has it suffered from frosts?
4. What insects appear to be doing the most damage in your locality?
5. How is planting progressing?
6. Is farm help scarce or plenty, and what proportion can be called good help?
7. What are the average wages paid farm help in your vicinity with board? Without board?
8. Will there be any marked change in the acreage of the usual farm crops, particularly corn and potatoes, and do you note any new enterprises in the line of agriculture?

Returns were received from 141 correspondents, and from them the following summary has been compiled: —

THE SEASON.

The month opened about two weeks in advance of the normal, but progress has been somewhat delayed by the unseasonably cold weather of the greater part of the month. At present vegetation and farm work are considerably in advance of the normal, while early crops are not beyond normal. There has been considerable dull, cloudy weather during the month, but the total rainfall has been light and rain is now badly needed in some sections. There seems to be a wide divergence of opinion among correspondents as to the forwardness of the season, some holding that it is in

advance of the normal and others that it is behind the normal. This is probably due, making all necessary allowance for local conditions, to the point of view of the individual, whether he looks at the condition of vegetation, of farm work or of early crops.

PASTURES AND MOWINGS.

Grass started early but has not made as rapid a growth as was promised, owing to cold weather and in some cases to lack of precipitation. Nevertheless, the prospect for pastures and mowings seems good at the time of going to press. Old fields and many pastures suffered severely from the drought of the late summer and autumn of 1909, and will hardly recover so as to do well, except with very heavy rains for the first weeks of June. Fall seeding generally wintered well, though there was less put in last year than usual, and in some cases the catch was below the average.

FRUIT BLOOM.

The fruit bloom was generally heavy, except for peaches, where it is reported to be light. There is less complaint of shortage of bloom on Baldwin apples than for several years past. Small fruits bloomed fully. The bloom of both orchard and small fruits was earlier than usual. The frosts of the month did little damage in the western and central counties, but in Middlesex and Essex counties there were some complaints of damage. This frost damage became more important in the southeastern counties, and in Plymouth County especially appears to have been rather serious. The early bloom on strawberries was reported as injured in all sections of the State. There were many reports of injury to asparagus from frost, and the injury to this crop seems to have been fully as important as that to the fruit crop.

INSECTS.

Insects appear to be about average in their development and numbers. Cut worms appear to be more than usually prevalent, and the gypsy and brown-tail moths seem to be extending their areas and increasing in numbers, if the

mention made of them by our correspondents is a proper standard of comparison with former years. Other insects mentioned are currant worms, white grubs, wire worms, potato bugs, elm-leaf beetles, asparagus beetles, tent caterpillars and apple-tree borers. More damage from the San José scale is reported than usual, but this is probably due to the fact that infested trees are dying rather than to any increase of the general infestation.

PLANTING.

Planting was well in hand at the time of making returns, potatoes and other early crops being mostly planted and corn planting well on towards completion. Tobacco setting had begun in the Connecticut valley. The dull and threatening weather of the month operated to check this class of farm work, but the early start obtained prevented it in general from falling below the normal.

FARM HELP AND WAGES.

There is a fair supply of farm help to be had, but there is the usual complaint that little of it is really good help. Really efficient farm labor is always difficult to secure and always will be, as the best men are usually prudent and forehanded, and eventually succeed in obtaining farms of their own. Wages are rather higher than they have been reported in years past. Twenty-three dollars per month with board seems to be a fair average of the wages paid, and from \$35 to \$40 per month without board, but with tenement, milk and fuel. Daily or weekly help is almost never secured at a rate below \$1.50 per day, and there are many reports of higher wages for day help, in some cases as high as \$2.50 per day. Such figures are exceptional, but there seem to be numerous localities where \$2 per day is the recognized rate of wages. There are few farmers who can afford to employ help at such prices and still show a profit on their products.

ACREAGE OF FARM CROPS.

There will be a marked increase in the acreage of corn, especially for grain, and a slight decrease in that of potatoes. This increase in corn production has been steady for the past few years, and shows that our farmers are alive to the high cost of grain, and to the necessity of doing something to offset it. Corn seems to be the grain that can be grown to best advantage in Massachusetts, and the feeding value of the stover forms an important item in addition. There is a marked increase reported in the acreage of onions in the onion-growing section of the Connecticut valley. There are no strictly new enterprises in agriculture, but a considerable increase of interest in fruit growing, especially in apples, is noted. This shows itself in the setting out of orchards and in greater attention to spraying on the part of the farmers. Considerable areas of new cranberry bog are reported as having been made in the southeastern section.

NOTES OF CORRESPONDENTS.

(Returned to us May 25.)

BERKSHIRE COUNTY.

New Marlborough (E. W. RHOADES). — The season is perhaps a week earlier than usual. Fall seeding came through the winter in fine shape and pastures and mowings promise well. All fruits blossomed very fully, with the exception of apples; no damage from frosts. Currant worms are very plentiful and apple tree borers cause much trouble. Planting is nearly completed. Farm help is none too plenty. Wages average \$25 per month with board and \$40 per month without board. More corn for the silo will be planted than usual and mangels will be planted to some extent.

Becket (Wm. H. SNOW). — The season is fully as advanced as usual, though late frosts have delayed planting. Pastures and mowings still suffer from last year's drought, but are otherwise in very good condition. The fruit bloom is very full and has not suffered from frosts. Tent caterpillars have appeared. Planting is progressing slowly on account of unfavorable weather. Farm help is scarce and only one-fourth of it is good help. Wages average \$25 per month with board and \$1.50 per day without board. The acreage of potatoes will be somewhat decreased this year and that of corn increased. There are many potatoes still on hand this spring and prices are low.

Washington (E. H. EAMES). — The season is two or three weeks later than the normal. Pastures, mowings and fall seeding are in very good condition. There is an average fruit bloom, with no damage from frost. No insects have appeared as yet. Planting is progressing slowly owing to rainy weather. There is hardly any farm help to be had. Wages average \$1.50 per day with board. There is little change in the acreage of farm crops.

West Stockbridge (J. S. MOORE). — The season is two weeks earlier than last year. Pastures and mowings are in good condition and fall seeding is looking well. There is about the usual fruit bloom and there does not seem to have been any injury from frosts, although there have been several hard ones. Planting is progressing well. Farm help is scarce and but little good help is to be had. Wages range from \$20 to \$25 per month with board and average \$1.50 per day without board. There will be about the usual acreage of the various farm crops. Milk is bringing better prices than ever before and farmers are increasing their herds.

Richmond (TIMOTHY B. SALMON). — The season is about an average one. Pastures look well and mowings are good, while fall seeding wintered well. There is a very heavy fruit bloom, with no damage from frosts. Currant worms are doing some damage. Planting is progressing rather slowly. Farm help is scarce and about half of it is good help. Wages average from \$24 to \$28 per month with board and from \$1.75 to \$2 per day without board. There will be no marked change in the acreage of farm crops.

Peru (F. G. CREAMER). — The season is an early one. Pastures look well and there is prospect of a good hay crop. Fruit trees bloomed well and there has been no damage from frosts. No insects are doing damage at present. There will be an increase in the acreage of farm crops this year and planting is progressing well. Farm help is scarce. Wages average \$1 per day with board and \$1.75 per day without board.

Windsor (HARRY A. FORD). — The season is in most ways ten days in advance of the normal. Grass never looked more promising. There was a full fruit bloom except on Baldwin apple trees, and no damage from frost. There are no insects doing damage. Planting is rather slow in some cases. Farm help is scarce. Wages range from \$20 to \$25 per month with board and from \$1.50 to \$1.75 per day without board. There will be no marked changes in the acreage of farm crops.

Lanesborough (W. E. FOSTER). — The season is very favorable, though the weather is a little cool. Pastures and mowings are in very good condition, to date, and fall seeding wintered well. The bloom of fruit trees is about 75 per cent of the normal; no damage from frost on high ground. Potato bugs are doing some damage. Planting is progressing finely. Farm help is scarce and about one-fourth of it good help. Wages average \$25 per month with board and \$1.50 per day without board. There will be an increased acreage devoted to corn.

Cheshire (L. J. NORTHUP). — The season is two weeks in advance of the normal. Pastures and mowings and also fall seeding promise well. Fruit trees of all kinds promise abundant crops and frost did no damage. Insects are doing little damage. Planting is progressing finely. Farm help is about as in former years. Wages average \$25 per month with board and \$35 to \$40 without board. There will be about the usual acreages of the various farm crops.

FRANKLIN COUNTY.

Charlemont (J. M. J. LEGATE). — The season is much later than usual. Grass looks the best of any crop and fall seeding wintered well. The fruit bloom was unusually heavy and has not been injured by frost, except the earliest bloom on strawberries. Insects are doing little if any damage. Planting is unusually late and there is very little corn planted as yet. Farm help is very scarce. Wages average

\$25 per month with board and from \$35 to \$40 per month without board. There will be about the usual acreage of corn and an increase in that of potatoes.

Colrain (W. H. DAVENPORT). — The season seems a favorable one. Grass looks well here and fall seeding looks excellently well. Orchards are blooming full except where the trees bore heavily last year. Small flies are doing some damage to the leaves of apple trees. Planting is late, but is progressing very rapidly just now. All farm help is very scarce, but that obtainable is mostly good help. Wages are \$1.25 to \$1.75 per day, with dinner, and there is little help hired by the month. Potatoes will show a normal acreage and corn an increase. Poultry raising is increasing here and apple culture is booming. The season has been exceptionally good for young chicks.

Ashfield (ALBERT HOWES). — The season is from a week to ten days early. Pastures are about average and mowings are looking well; fall seeding wintered well. All fruits blossomed fully, especially apples, and there has been no injury from frosts. Owing to the cold and wet weather we have seen few insects. Planting is a little ahead of the normal, though rains have delayed it somewhat. Help is scarce and 75 per cent of it is good help. Wages range from \$20 to \$25 per month with board and average \$1.75 per day without board. Farm crops show the usual acreage, with perhaps a slight increase in corn.

Conway (L. T. HOPKINS). — The month of May has been very cold. Pastures and mowings look very well. Fruit of all kinds bloomed very full, but it has suffered somewhat from frosts. Currant worms are doing some damage. Planting is not half done. Farm help is scarce. Wages range from \$18 to \$25 per month with board and from \$1.50 to \$2 per day without board. There will be a slight increase in the acreage of corn and perhaps a decrease for potatoes.

Whately (C. L. CRAFTS). — The spring is wetter than usual. Pastures and mowings are in good condition and fall seeding is extra good. All fruit trees blossomed full, but apples suffered severely from frost. Wire worms and cut worms are doing damage. Planting is progressing about as usual and tobacco is now being transplanted. Farm help is very scarce, but most of it is good help. Wages range from \$25 to \$30 per month with board and from \$35 to \$45 without board. There is a heavy increase in the acreage of onions.

Montague (A. M. LYMAN). — The season is a very favorable one. Pastures and mowings are in good condition and fall seeding wintered remarkably well. The fruit bloom was better than usual, and there was but little damage from frost. Only a few insects have appeared. Planting is in full swing. Farm help is fairly plenty and middling good. Wages average \$23 per month with board and \$1.50 per day without board. The acreage of corn will be slightly increased.

Northfield (THOMAS R. CALLENDER). — The season is about a week in advance of the average. Pastures and mowings are in good condition and fall seeding wintered well. All fruit bloomed full and has

suffered little from frost. Cut worms are doing some damage in gardens. Corn for grain will be practically all planted this week. Farm help is scarce, but Polish help is good if it can be obtained. Wages average \$25 per month with board and from \$1.75 to \$2 per day without board. There will be an increase in the acreage of corn. Our farmers are generally fitting their land more thoroughly than usual and making better selection of seed corn.

Erving (CHAS. F. CLARK). — The season is more forward than usual in some respects. Pastures and mowings promise well and fall seeding wintered well. The fruit bloom is above the average and has not suffered from frost. Planting is progressing finely. Farm help is not very plenty, but perhaps two-thirds of it is good help. Wages average \$25 per month with board and \$1.60 per day without board. There will be no marked changes in the acreage of the usual farm crops.

Wendell (NELSON D. PLUMB). — The season is somewhat backward. Pastures and mowings are above normal at this season and seeding above average. Fruit trees of all kinds are in full bloom and have not been affected by frost. No insects are doing damage. The majority of our farmers have finished planting. Farm help is very scarce and half of it reliable. Wages average from \$1.75 to \$2 per day without board. Only about half the usual acreage of potatoes will be planted and nearly all are planting more corn than in former years.

HAMPSHIRE COUNTY.

Ware (J. H. FLETCHER). — The season is earlier than last year. Pastures and mowings are coming on very well and fall seeding is looking well. The fruit bloom was very full and there has been no damage from frosts. There is no damage from insects. Planting is progressing very well. About the usual supply of help is available and half of it is good. Wages range from \$20 to \$25 per month with board and average \$1.50 per day without board. More corn will be planted than in past years.

Greenwich (W. H. GLAZIER). — The season is about two weeks earlier than usual. Pastures are in good condition and fall seeding is looking excellently; old mowings are in fair condition. All fruit trees are full of bloom, with but little damage from frost. Cut worms are doing some damage and a few tent caterpillars have appeared. Planting is progressing very well and every one is busy. Farm help is scarce but what there is is good. Wages average \$1.50 per day and there is but little help hired by the month. There is about the usual acreage of corn and potatoes. There are a good many potatoes on hand which will have to be fed to stock.

Belchertown (H. C. WEST). — The season is ten days ahead of the normal. The two past dry seasons have injured pastures and mowings; fall seeding is fairly good. The fruit bloom was very full and frosts have done no harm. White grubs are doing some damage to straw-

berries. Potatoes are mostly planted and corn planting is going on. Farm help is more plenty than in years past and of better quality. Wages average \$25 per month with board and \$2 per day without board. More corn than usual is being put in.

Amherst (Prof. Wm. P. BROOKS). — The season is perhaps ten days ahead of the normal. Pastures and mowings promise well, though doubtless injured by the numerous frosts; fall seeding wintered well. Apples had a fair bloom; peaches, pears and plums abundant; strawberries considerably injured by frost, other fruits uninjured. Currant worms are the only insect at all prominent; but many elm beetles are coming out from hibernation. Planting is nearly finished except corn and tobacco setting is beginning. Farm help is in fair supply and quality. Wages range from \$18 to \$30 with board and from \$1.50 to \$1.60 per day without board. The acreage of onions will be increased. Conditions for farm work have been favorable and it is well in hand.

Hadley (H. C. RUSSELL). — The season is about ten days earlier than usual. Grass will be an excellent crop and pastures are looking well. Apples and pears bloomed very full, small fruits fair. Potatoes are planted and corn is being planted. There will be quite an increase in the acreage of onions. Farm help is not very plenty, but three-fourths of it is good help. Wages average from \$20 to \$22 per month with board and from \$1.25 to \$1.50 per day without board.

Easthampton (WILLIAM C. CLAPP). — The season is fully up to the normal. Mowings and pastures are looking well and fall seeding wintered well. There was a good fruit bloom with no damage from frosts. Currant worms are plenty, also cut worms and tent caterpillars. Planting is progressing well, potatoes being mostly planted. There is about the usual supply of help. Wages range from \$18 to \$25 per month with board and from \$1.50 to \$1.75 per day without board. Most farmers are planting all the corn they can take care of.

Westhampton (LEVI BURT). — The season is a normal one. Pastures are in good condition and grass never looked better; fall seeding wintered well. Apples are in full bloom; other small fruits about average; no frost to do damage to fruit. Insects are doing no damage as yet. Planting has been delayed by rainy and cold weather. Farm help is not very plenty and is generally good. Wages range from \$18 to \$25 per month with board and average \$1.50 per day without board.

Williamsburg (F. C. RICHARDS). — The season is about two weeks in advance of the normal. Pastures and mowings promise well and fall seeding wintered finely. There was a full bloom of all kinds of fruit and no injury from frosts. Tent caterpillars are the only insect in evidence and they are not abundant. Planting is nearly completed. Help is scarce and good help would be a surprise. Wages range from \$20 to \$25 per month with board and from \$35 to \$40 without board.

There will be an increase in the acreage of corn. All fruits are setting well.

Goshen (GEO. L. BARRUS). — The season is two or three weeks ahead of the normal. Pastures and mowings seldom look better at this time of year. The fruit bloom is somewhat better than normal, with no damage from frost. Tent caterpillars have appeared. Planting is fully up to the normal, though somewhat hindered by wet weather. Good help is scarce and help in general is not plenty. Wages are \$1 per day or \$25 per month with board and \$1.50 to \$1.75 per day without board. No marked difference in the acreage of the usual farm crops is noted.

HAMPDEN COUNTY.

Russell (E. D. PARKS). — The season is up to the average. All grass, including new seeded fields, is looking very well. The fruit bloom was quite full, especially apples; the frost did no harm in this section. Tent caterpillars and currant worms are doing some damage. Planting is nearly finished. Farm help is very scarce and there is but little good help. Wages average \$25 per month with board and \$45 without board. There is quite an interest in fruit hereabouts and some good orchards are being started.

Granville (JOSEPH WELCH). — The season is more forward than usual. Pastures and mowings are looking finely and fall seeding wintered well. The fruit bloom was heavier than usual and has not suffered from frost. The season being wet there are no troublesome insects as yet. Planting is progressing rather slowly. There is a fair amount of good help. Wages average \$1.75 per day without board. The acreage of corn will be increased.

Agawam (J. G. BURT). — The season is fully up to the average. Pastures and mowings are looking well and fall seeding wintered well. There is a full bloom of fruit trees; strawberries may have suffered from frosts. Planting is progressing well. Farm help is scarce and there is very little good help. Wages average from \$22 to \$28 per month with board and from \$35 to \$40 without board. There will be an increase in the acreage of corn and a decrease in that of potatoes.

West Springfield (T. A. ROGERS). — Grass and grain are in advance of the normal and the season is otherwise about normal. Pastures and mowings look well and fall seeding is in fine condition. Apples had hardly a full bloom; pears, peaches and plums full; berries full; no injury from frost. No insects are doing serious damage at present. Potatoes are mostly planted, also garden truck; not much corn planted as yet. Farm help is plenty and mostly very good. Wages range from \$25 to \$30 per month with board and from \$1.50 to \$1.75 per day without board. There will be an increased acreage of both corn and potatoes.

East Longmeadow (JOHN L. DAVIS). — The season is backward but favorable. There was some injury to grass by winterkilling, but it is

generally in better than average condition. There was a large fruit bloom, but some damage from frost. Grubs and cut worms are doing some damage. Planting is progressing very rapidly and the season has been favorable for fitting the ground. Farm help is plenty, but wages are a little higher than usual. Wages range from \$20 to \$25 per month, for eight months; and from \$1.75 to \$2 per day without board; with day help in haying from \$2 to \$2.50. There will be more corn planted and less potatoes than usual. Our farmers are more particular than usual about the quality of the seed they plant.

Chicopee (E. L. SHAW). — The season is about a week earlier than usual. Pastures and mowings are doing well and fall seeding wintered well. Apples made a full bloom, others quite full; no damage from frosts. Cut worms, wire worms, and white grubs are doing damage in gardens and to strawberries. Potatoes are planted and corn is partly planted, all are busy putting in garden crops. Help seems more plenty than usual, but only a small part of it is good help. Wages range from \$25 to \$30 per month with board and from \$1.25 to \$1.50 per day without board. The acreage of corn will be increased and that of potatoes decreased.

Wilbraham (HENRY M. BLISS). — The season is ten days behind the normal. The promise for pastures and mowings is good and fall seeding wintered well. The fruit bloom was full average and that of peaches extra good. The San José scale and the elm leaf beetle are doing damage. Planting is progressing very slowly. Farm help is scarce and about 25 per cent of it good help. Wages range from \$25 to \$30 per month with board and are 20 cents per hour without board. More corn than usual is being planted.

Monson (F. D. ROGERS). — The season has been checked by cool weather so that it is not more than a week in advance of the normal. Pastures were poor, but are now improving; fall seeding and mowings are looking well. Fruit trees bloomed profusely, except a few varieties of plums; there has been little damage from frost. Insects are doing little damage as yet. Potatoes and early garden truck are planted and most corn will be planted this week. Farm help is not plenty. Wages range from \$20 to \$25 per month with board and average \$30 without board, but with rent, wood and milk. The acreage of corn will be increased and that of potatoes decreased.

Palmer (O. P. ALLEN). — The season compares well with the normal. Pastures and mowings are looking well and fall seeding wintered well. The fruit bloom was fully up to the normal; some damage from frost, but not serious. Currant worms and cut worms have appeared. Planting is progressing fairly well. Farms help is, as usual, rather scarce and about one-fourth of it is good. Wages average \$18 per month with board and \$1.50 per day without board. There are no marked changes in the acreages of the usual farm crops.

WORCESTER COUNTY.

Warren (WILLIAM E. PATRICK). — In many ways the season is earlier than usual. Pastures are poor, but mowings are looking finely; fall seeding is in good condition. There is a large bloom on apples, pears, plums and small fruits. There is little damage from insects. Planting will be late as the ground is cold and wet. All help is scarce and there is no good help. Wages average \$25 per month with board and from 15 to $17\frac{1}{2}$ cents per hour without board. There will be an increased corn acreage.

West Brookfield (MYRON A. RICHARDSON). — The season is at least two weeks ahead of the normal. Mowings are looking finely, pastures are about normal; fall seeding up to the average. There is a full bloom on apples, pears and plums, but light bloom on peaches; no damage from frost. Currant worms and a few tent caterpillars have appeared. Potatoes are nearly all planted, with an increased acreage, and corn ground is all ready for planting. Farm help is about normal in quantity and quality. Wages range from \$25 to \$30 per month with board and from \$40 to \$50 per month without board. There have been several acres of peach trees set out the past year and more are to be set out.

North Brookfield (JOHN H. LANE). — Foliage is two weeks ahead of the normal, but it has been too cold for hoed crops. Pastures and mowings are in poor condition. There was a heavy fruit bloom, with no general injury from frost. No insects have appeared as yet. Planting is progressing as usual. Farm help is scarce and about 10 per cent of it is good help. Wages average \$25 per month with board and \$2 per day without board. There will be a 20 per cent increase in the acreage of potatoes.

Oakhamb (JESSE ALLEN). — The season compares very favorably with the normal. Pastures and mowings are looking well and fall seeding wintered well. There was a very full bloom on apples and pears and no damage from frost. Tent caterpillars have appeared, but are not numerous. Farm help is plenty and fairly good. Wages range from \$20 to \$25 per month with board and from \$30 to \$40 without board. More corn than usual will be planted. The dairy business is very unsettled.

Rutland (WARREN I. WALES). — The present season compares well with the normal. Pastures and mowings are in good condition and fall seeding came through the winter well. The fruit bloom was extra good and has not suffered from frosts. Planting is progressing rather slowly. Farm help is scarce and but a small proportion of it good. Wages average \$25 per month with board and \$1.50 per day without board. There are no marked changes in the acreage of farm crops.

Petersham (B. W. SPOONER). — The season will compare favorably with other years. Pastures are up to the normal and all mowings look

finely. All fruit trees blossomed full, and there has been no damage from frost. No insects are doing damage as yet. Potatoes are now planted and corn will be planted this week. Farm help is rather above the normal in quantity and quality. Wages average \$25 per month with board and \$35 without board. More corn than ever will be planted this year, with the acreage of potatoes about as usual.

Ashburnham (E. D. GIBSON). — The season is ten days ahead of the normal. Pastures show the effect of last year's drought; fall seeding wintered well. There is a very full bloom of all fruits and berries, with no damage from frosts. There is very little damage from insects. Planting is about normal. Farm help is scarce and satisfactory help is almost impossible to obtain. There is a gradual increase of the acreage devoted to corn from year to year.

Fitchburg (Dr. JABEZ FISHER). — The season was the earliest, on May 1st, at that date for 54 years. There has been no damage to grass from winterkilling. The fruit bloom was the finest for years, with no frost. Cut worms are doing some damage. Planting is not progressing as rapidly as was promised. Farm help is scarce, especially good help. Wages average \$20 per month with board and \$1.50 per day without board.

Westminster (F. W. DERBY). — The season is rather backward. Pastures and mowings are looking well and fall seeding is in fair condition. The fruit bloom is above the average and has not suffered from frost. The number of brown-tail moths is increasing. Planting is progressing very slowly as the ground is cold and wet. Farm help is scarce and not more than half of it is good help. Wages range from \$15 to \$20 per month with board and average \$1.75 per day of ten hours without board. The acreage of the various farm crops is about as usual.

Princeton (A. O. TYLER). — The season opened three weeks earlier than the normal, but cold weather in May has retarded the growth of crops. Pastures and mowings never looked better and fall seeding wintered well. Apples, pears and plums bloomed full; peaches fair; small fruits good; no damage from frosts. Tent caterpillars and currant worms are doing some damage. With the exception of corn planting is about completed. Farm help is plenty and about half is good help. Wages range from \$18 to \$25 per month with board and from \$1.50 to \$2 per day without board. There will be a greater acreage of corn and a smaller acreage of potatoes than last year.

Bolton (H. F. HAYNES). — The season is about a normal one. Grass looks finely, though pastures are a little backward; fall seeding wintered well. The fruit bloom suffered no damage from frost, but it did some damage to asparagus. Insects are doing little damage. Planting is progressing finely and is nearly completed. Farm help is scarce. Wages range from \$20 to \$25 per month with board and average \$1.75 per day without board. There is a normal acreage of all farm crops.

Shrewsbury (F. J. REED). — The season is two weeks in advance of

the normal. Pastures and mowings are looking well and fall seeding wintered well. The fruit bloom was very heavy on apples and pears and light on peaches; frost did some damage to small fruit. Cut worms are very numerous. Planting is almost completed, except for corn, and much of that has been put in. There is an average supply of farm help and a third of it is good help. Wages range from \$25 to \$30 per month with board and from \$1.75 to \$2 per day without board. The acreage of corn will be the largest for years.

Westborough (MASON TAFT). — The season is a very good one to date. Grass is in fairly good condition. The fruit bloom was a favorable one. Potato bugs are doing some damage. Planting is progressing well. Farm help is scarce and none of it good help. Wages average \$25 per month with board and \$45 without board. More corn than usual will be planted, very little change in the acreage of other crops.

Auburn (W.M. GILBERT). — The season is a little below the normal. Pastures are in good condition and mowings promise well; fall seeding wintered well. All fruit trees blossomed full, with no damage from frost. Cut worms are very plentiful this year. Planting is progressing slowly, owing to cold weather. Farm help is scarce, and about half of it good help. Wages average \$25 per month with board and \$1.75 per day without board. There will be an increase of 50 per cent in the acreage of field corn.

Milford (JOHN J. O'SULLIVAN). — The season is two weeks earlier than usual. Pastures and mowings are in good condition and fall seeding wintered fairly well. The fruit bloom was fair, but it has suffered somewhat from frosts. The San José scale is doing considerable damage. Planting is well advanced. Farm help is scarce and none of it is good help. Wages range from \$20 to \$30 per month with board and from \$1.50 to \$2 per day without board. There will be no marked changes in the acreage of the usual farm crops.

MIDDLESEX COUNTY.

Hopkinton (W. V. THOMPSON). — Some few crops are advanced beyond the normal, but as a general thing the season is normal at present. Pastures and mowings promise well with rain and fall seeding wintered well. There was a full bloom of all fruits except peaches, with no damage from frost. White grubs and spittle insects are doing some damage. Planting is progressing slowly. Very little farm help is hired here except by the day and that is good help. Wages average 20 cents per hour without board. The acreage of potatoes will be less than usual.

Marlborough (E. D. HOWE). — The season started about three weeks ahead of the normal, but has been gradually falling back. Pastures and mowings look well and fall seeding wintered well. The bloom on apples and pears was fair; peaches poor; plums and small fruits

good; no damage from frosts. Brown-tail moth caterpillars are doing some damage. More than the usual amount of planting has been done. There is little difficulty in getting good help. Wages average \$25 per month with board and \$2 per day without board. There will be an increased acreage of corn.

Maynard (L. H. MAYNARD). — The season is somewhat backward, owing to cold and cloudy weather. Pastures and mowings promise well and fall seeding wintered well. The fruit bloom was average, with no damage from frosts. Brown-tail moths are doing considerable damage and gypsy moths are also in evidence; cut worms are very plenty and potato bugs have made their appearance. Planting is progressing rapidly. Farm help is scarce and good help hard to find. Wages average from \$20 to \$25 per month with board and from \$1.50 to \$2 per day without board. The acreage of farm crops will be about the same as usual. A considerable number of apple and pear trees have been killed by the San José scale.

Westford (J. W. FLETCHER). — Pastures and mowings promise well and fall seeding wintered well. Apples and pears showed a good bloom; frost did some damage on small fruits. Planting is progressing well. Farm help is scarce and it is difficult to get good help. Wages average \$25 per month with board and range from \$45 to \$50 per month without board. There will be a large increase in the acreage of corn.

Dunstable (A. J. GILSON). — The present season compares very favorably with the normal. Pastures and mowings promise well and fall seeding wintered well. The bloom of apples, pears and small fruits was heavy, peaches and plums none; no damage from frost. There are no insects doing damage at present. Planting is progressing rapidly. Farm help is very scarce, but what there is is very good. Wages average \$1.25 per day without board and from \$9 to \$10 per week. There will be increased acreages of corn and potatoes.

Billerica (E. F. DICKINSON). — The season opens favorably, but rain is needed. Pastures and mowings are in average condition and fall seeding wintered well. There is a full fruit bloom, except peaches, which were light. Brown-tail moth caterpillars are very numerous. Planting is progressing well and will be completed earlier than usual. Wages range from \$20 to \$25 per month with board and farm help is scarce. More field corn than usual will be planted. Many fruit trees, especially apples, have been set out.

Concord (Wm. H. HUNT). — Spring opened about ten days early, but the weather for May has been cold. Pastures, fall seeding and mowings are looking well. There has been a good bloom on all fruits. Gypsy and brown-tail moths are increasing in the woodlands. Planting is earlier than usual. Cheap farm help is plenty, but good help is scarce. Wages average \$23 per month with board and \$40 without board. The acreage of farm crops is about the same as usual. Late spring frosts injured asparagus and strawberries considerably in this vicinity.

Stoneham (J. E. WILEY). — The season is a little backward. Pastures and mowings are in good condition and fall seeding wintered well. The bloom on apples and pears was heavy, with no injury from frost. No insects are doing damage as yet. Planting is progressing well. There is not enough farm help employed to estimate as to supply and wages. There will be no marked changes in the acreage of the usual farm crops.

Weston (HENRY L. BROWN). — The season has been very dry and crops are not up to the normal. Pastures and mowings started very early, but are not making much growth now. There was a full bloom on apples and pears; that on peaches and plums was killed by frost. The San José scale, gypsy and brown-tail moths are all doing a good deal of damage, and cut worms are unusually plenty. Planting is progressing as usual. Good help is scarce. Wages average \$25 per month with board and range from \$40 to \$50 per month without board. Indian corn is not much grown and I think the acreage of potatoes will be decreased.

Newton (G. L. MARCY). — Spring opened early, but lacks warm days. Pastures and mowings promise well. The fruit bloom was good, with no damage from frosts. No insects are doing more than the ordinary amount of damage. Planting is progressing well. Farm help is scarce and there is none that can be called A No. 1. There are no marked changes in the acreage of farm crops.

ESSEX COUNTY.

Merrimac (S. B. SARGENT). — The season started very early, but at present is not much ahead of the normal. Fall seeding wintered well; mowings look well; pastures amount to very little. There was a full bloom on apples, pears and plums; no peaches. Tent caterpillars are doing some damage. Planting is nearly completed, except corn. Extra help is not very plenty, but regular help is mostly fairly good. Wages average \$25 to \$28 per month with board and \$35 per month without board; day help is from \$1.50 to \$2. There will be about the usual acreage of farm crops.

Groveland (A. S. LONGFELLOW). — The season is a week or ten days ahead of the normal. Grass started well, but needs soaking rains; fall seeding wintered well. There was a good fruit bloom, with no damage from frost. There are many tent caterpillars, brown-tail and gypsy moths. Planting is well along. Help is reasonably plenty and perhaps half can be called good. Wages average \$20 per month with board and \$1.50 per day without board. Rather more corn will be planted than in previous years.

Andover (MILo H. GOULD). — The season is backward except for grass. Pastures and mowings are in good condition and fall seeding wintered well. The fruit bloom was good, but frost did damage in some places. Brown-tail, gypsy moths and tent caterpillars are doing

some damage. Planting is nearly completed. Farm help is scarce and about 20 per cent of it good help. Wages average \$24 per month with board and \$1.75 per day without board. More corn and less potatoes will be raised than usual. Farmers are spraying fruit trees more than usually.

Topsfield (B. P. PIKE). — The season is about an average one. Pastures and mowings promise fairly well and fall seeding wintered well. Baldwin apples made a light bloom; pears, peaches and plums light. Brown-tail moths are very plentiful. Planting progressing very well. Farm help is scarce and very little of it first class. Wages average \$25 per month with board and \$40 per month without board. More corn will be put in than usual. Apples generally bloomed fairly full.

Hamilton (GEORGE R. DODGE). — The season appears to be about normal. Fall seeding in most cases wintered well; pastures are fair, but the hay crop seems likely to be light. All fruits except peaches bloomed full, also small fruits; early blossoming strawberries suffered from frost. Tent caterpillars and cut worms are in evidence. Planting is pretty well along, except field corn, which will be completed this week. Farm help is scarce and not first class. Farm help is all hired by the day, without board, at from \$1.50 to \$1.75. About the usual acreage of farm crops will be put in.

Danvers (CHARLES H. PRESTON). — The season is earlier than usual by about a week. Pastures and mowings promise fairly well and fall seeding wintered well. The fruit bloom was good, except on peaches. Gypsy and brown-tail moths have appeared. Planting is progressing well. Farm help is scarce and but a small proportion of it good help. Wages average \$25 per month with board and \$43 without board. There will be no marked changes in the acreage of the usual farm crops.

NORFOLK COUNTY.

Cohasset (ELLERY C. BATES). — The season is a normal one. Pastures and mowings are in good condition and fall seeding wintered well. The fruit bloom was normal, with no damage from frosts. No insects are doing damage at present. Planting is progressing well. Farm help is scarce and about half of it good help. Wages range from \$20 to \$25 per month with board and from \$1.50 to \$1.75 per day without board. There will be no marked changes in the acreage of the usual farm crops.

Randolph (RUFUS A. THAYER). — The season is a good average one. Pastures and mowings are in very good condition and fall seeding wintered well. Apples, pears and small fruits bloomed well; peaches poor; no frost. Gypsy moths are doing some damage. Planting progressing very rapidly. Farm help is scarce and very little of it is good help. Wages range from \$25 per month with board to \$35 without board and from \$1.50 to \$2 per day without board. Peach trees winterkilled badly.

Canton (E. V. KINSLEY). — The season is about two weeks earlier than the normal. Pastures and mowings look finely and fall seeding wintered very well. There was a very full bloom on apples, pears, plums and small fruits. Cut worms are doing some damage. Planting is much ahead of the normal. Farm help is not plenty and one in five is fairly good. Wages range from \$20 to \$30 per month with board and from \$1.50 to \$2 per day without board. Rather more field corn than usual will be planted. Milk is in fair supply; extra milch cows high.

Walpole (EDWARD L. SHEPARD). — The season is a normal one. Pastures and mowings look fairly well, but need sun and rain; fall seeding wintered well. The apple bloom was good, that of other fruits light. Tent caterpillars, gypsy and brown-tail moths have appeared. Planting is nearly finished. Farm help is scarce and not more than half of it is good help. Wages range from \$25 to \$30 per month with board and average \$2 per day without board. There is about the usual acreage of farm crops.

Norfolk (A. D. TOWNE). — The season opened about three weeks ahead of the normal, but is now about normal. Pastures and mowings look well and fall seeding wintered well. There was a full fruit bloom, but peaches and plums suffered severely from frost, while apples and pears suffered slightly; strawberries and asparagus were also badly damaged. Elm beetles, and tent caterpillars are doing some damage, while the gypsy moth is increasing. Potatoes are all planted and corn planting is now going on. Farm help is rather scarce and one-third of it is good help. Wages range from \$20 to \$28 per month with board and from \$1.75 to \$2 per day without board. There will be an increase of 50 per cent in the acreage of corn.

Franklin (C. M. ALLEN). — The season is better than average. Pastures and mowings are in very good condition, but fall seeding is below the average. The fruit bloom was fine and has not suffered from frost. Insects are doing but little damage. Planting is progressing finely. Farm help is scarce and there is very little good help. Wages average \$25 per month with board and \$2 per day without board. More corn and more market garden crops than usual are being put in.

BRISTOL COUNTY.

Easton (Wm. N. HOWARD). — The season is apparently a normal one. Pastures and mowings are looking well and fall seeding wintered well. There was a fair fruit bloom, not quite up to the average. Insects are not noticeable at this time; orchards are being sprayed quite generally. Planting is progressing fairly, being somewhat retarded by cold weather. Farm help can be secured by those giving steady employment, mostly Portuguese and good laborers on work they understand. Wages range from \$1.50 to \$1.75 per day without board. Potatoes are likely to be reduced in acreage.

Seekonk (JOHN W. PECK). — The season is about a normal one. Grass is good on low lands and fall seeding wintered well. Apples were not up to the normal in bloom; pears, plums and small fruits heavy; no damage from frosts. Cut worms and white grubs are reported in some fields of cabbage. Planting is progressing finely. Day help is plenty, mostly Portuguese and fairly good; help by the month scarce. Wages average \$25 per month with board and \$9 per week without board. There will be more corn and less potatoes planted than usual. More winter spinach and kale has been cut and marketed this spring than ever before.

Dighton (HOWARD C. BRIGGS). — The season is an average one. Pastures are in good condition; hay will be an average crop; fall seeding wintered poorly. There was an average bloom of all fruit and but little damage from frost, except to strawberries. Nearly all insects are more troublesome than usual, especially cut worms. Planting is progressing finely. Farm help is scarce and perhaps one-half of it is good help. Wages range from \$25 to \$30 per month with board and average \$1.50 per day without board. There are no marked changes in the acreage of the usual farm crops.

Berkley (ROLLIN H. BABBITT). — The season is about ten days earlier than the normal. Pastures and mowings promise well and fall seeding looks well, but rain is needed. The fruit bloom was about average, but has suffered somewhat from frost. Elm beetles and cut worms have appeared. Planting is progressing finely. Good help is scarce. Wages range from \$20 to \$25 per month with board and average \$1.50 per day without board. Much more corn than usual will be planted and less potatoes.

Swansea (F. G. ARNOLD). — March and April were very dry. Pastures look well, meadows fair; fall seeding wintered well. The fruit bloom was about normal and frost has done no damage. Elm beetles are doing some damage. Planting is about completed. Farm help is scarce and about half is good help. Wages average \$24 per month with board and \$30 to \$33 without board but with tenement and garden; day help \$1.50 per day without board. There will be an increased acreage of corn, oats and fodder crops.

Acushnet (M. S. DOUGLAS). — Everything is about ten days ahead of the normal. Pasturage is good and mowings very good; fall seeding wintered well. All fruits bloomed very heavily, and there is no apparent damage from frost. Tent caterpillars, cut worms and black flies are doing damage. Planting is progressing finely. Farm help is very scarce and the supply of good help is very small. Wages average \$25 per month with board and from \$1.50 to \$1.75 per day without board. There will be more corn planted than usual, and the acreage of potatoes will be decreased, on account of the prevailing low price. A good many apple and peach trees were set out last year, as farmers have found out that good fruit can be raised by spraying. Peas are not up to the average, because of cold nights.

PLYMOUTH COUNTY.

Norwell (HENRY A. TURNER). — The season is early, but in other respects about normal. Pastures and mowings are looking well. There was a very full fruit bloom, and with the exception of peaches, fruit has not suffered much from frosts. Elm leaf beetles are doing some damage. Farmers are well along with their planting. Farm help is fairly plenty and about half of it is good help. Wages average from 15 to 20 cents per hour without board. There will be an increase in the acreage of corn. Strawberries were badly injured by frost.

Brockton (DAVIS COPELAND). — The season is about a week ahead of the normal. Pastures and mowings are in good condition and fall seeding promises well. There was a full fruit bloom, but it was somewhat injured by frost. Tent caterpillars are doing some damage. Planting is progressing fairly well. Farm help is not plenty and about half of it is good. Wages range from \$18 to \$25 per month with board and from \$1.25 to \$2 per day without board. Rather more corn is being planted than usually.

Plympton (WINTHROP FILLEBROWN). — The present season is cold and late compared with the normal. Pastures are looking well; mowings very backward; fall seeding wintered well. There was an excellent fruit bloom, but it was badly injured by frost. Tent caterpillars, cut worms, elm beetles and gypsy moths are in evidence. Planting is rather backward, the first planting of sweet corn having been lost from frost in many cases. Good help at an economical price is scarce. Wages average \$25 per month with board and from \$1.75 to \$2 per day without board. There will be an increase in the acreage of corn and potatoes.

Rochester (GEO. H. RANDALL). — The season is about two weeks earlier than usual and otherwise normal. Pastures and mowings are in good condition; fall seeding wintered well. Some apple trees show a full bloom and others in the same orchard show none. Pears, peaches, plums and small fruits bloomed full. Cut worms, wire worms, tent caterpillars and currant worms are doing damage. Corn and potatoes are nearly all planted; forage crops and root crops backward. Farm help is scarce and not much of it is good. Wages average \$25 per month with board and \$1.50 per day of 9 hours without board. More farmers are planting corn than for many years. Frost did some damage to asparagus and strawberries, also cranberries where not flowered.

Mattapoisett (EVERETT C. STETSON). — The season is rather dry and earlier than usual. Pastures and mowings are in good condition and fall seeding wintered quite well. Fruit trees bloomed well, but there was some injury from frost. Cut worms are doing some damage. Planting is progressing very well. Farm help is quite plenty and about half of it is good help. Wages average \$20 per month with board and \$35 per month without board. The acreage of corn will be increased.

BARNSTABLE COUNTY.

Bourne (DAVID D. NYE). — The season compares favorably with the normal. Pastures and mowings look well. Apples do not bloom as fully as formerly, but the fruit bloom this year was fully up to recent years. Tent caterpillars are doing some damage. Planting is progressing favorably. Farm help is scarce and it is hard to get good help. Wages range from \$20 to \$25 per month with board and are 25 cents per hour without board. There will be an increased acreage of farm crops.

Falmouth (DANIEL R. WICKS). — The season is a week or ten days earlier than usual. Pastures and mowings are fully up to the normal and fall seeding wintered well. Large fruits all bloomed full, but peaches and plums suffered from wet weather and currants and gooseberries from frost. Currant worms and tent caterpillars are in evidence. Planting is well along and crops are coming up. There is no good farm help here. Wages average \$30 per month with board and 25 cents per hour without board. The acreage of corn and potatoes will be slightly increased. Some early strawberry blooms were injured by frost, but the crop promises finely.

Mashpee (WATSON F. HAMMOND). — The season is about a week late. Pastures and mowings are below the average; fall seeding looks well. All fruit trees bloomed very full, but have been badly injured by frost. Cut worms and tent caterpillars are doing damage. Planting is about half done. Farm help is plenty and three-fourths of it is good help. Wages average \$1 per day with board and \$1.80 per day without board. The acreage of corn will be increased one-fourth.

Barnstable (JOHN BURSLEY). — Vegetation is possibly a little earlier than usual. Hay looks well on light lands, but heavy soils have not recovered from last year's drought; much fall seeding was a failure. Strawberries bloomed well; apples and pears very light; plums full. Tent caterpillars are doing some damage. Planting is progressing slowly. Farm help is very scarce and only one-fourth of it good. Wages average \$30 per month with board and from 22 to 25 cents per hour without board. There is possibly a little increase in the acreage of corn.

Wellfleet (E. S. JACOBS). — The season is cold and backward, with much frost. Pastures and mowings are in very good condition and fall seeding looks finely. Tent caterpillars are numerous. Orchards are full of bloom and a good fruit crop is expected. Planting is progressing very slowly, cold preventing work. Farm help is scarce and very poor. Wages average \$30 per month with board and 20 cents per hour without board. Some extra cranberry bogs have been made.

Truro (JOHN B. DYER). — The season has been unusually cold at times. Pastures are good and fall seeding wintered fairly well. Apples bloomed rather shy; pears and peaches good; frosts have injured

peaches. Insects show in the usual number and variety. Planting is progressing as usual. Farm help is not very plenty. Wages average \$15 per month for boys with board and 20 cents per hour without board. There are no marked changes in the acreage of farm crops.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE). — The season is much more forward than usual. Pastures and mowings promise well. Fruit bloomed below the normal, but did not suffer from frost. Tent caterpillars are doing some damage. Planting is progressing rapidly. Farm help is rather scarce, and about one in four is competent. Wages range from \$18 to \$25 per month with board and from \$1.75 to \$2 per day without board. There are no marked changes in the acreage of farm crops.

BULLETIN OF MASSACHUSETTS BOARD OF AGRICULTURE.

CORN SELECTION FOR SEED AND FOR SHOW.

By PROF. WILLIAM D. HURD, *Massachusetts Agricultural College.*

The renewed interest in corn growing is a significant thing in New England agriculture. When corn could be laid down "on track" in the east for 30 cents a bushel there may have been some excuse for the New England farmer depending on the "corn belt" for this important product. For the past ten years, however, the price in the eastern States has ranged from 70 to 90 cents a bushel. Careful calculations show that corn can be raised on New England farms at a cost of from 30 to 45 cents per bushel (shelled), hence it is a profitable crop to raise. That corn is adapted to almost any rotation, that silage is indispensable in feeding a dairy herd, that this crop is extensively used in the arts and manufactures, always finding a ready market, and its being a native of New England are further reasons why this most important crop in this country should be more extensively grown here.

The average yield of corn throughout the United States, according to 1908 statistics, was 26.2 bushels per acre. The average yield over the six New England States for the same year was 40.5 bushels to the acre. This same year several growers in New England obtained yields of from 100 to 133 bushels of shelled corn to the acre (calculated when taken from the field). What accounts for this wide difference between the average yield and that secured by careful growers? No doubt favorable soil, proper manuring, cultivation, etc., played important parts, but probably the most important factor was strong, virile, productive, properly selected seed. The need of more attention on the part of farmers to seed selection, and the fact that this year there is to be held in New England a great corn exposition, where selection and preparation of samples for show will count, are sufficient reasons for the emphasizing of these points in this paper. An attempt only has been made to take up such points as would aid New England farmers to improve their corn, and get ready for the exposition.

The main object from the standpoint of the farmer in all breeding of plants and animals is to improve the plant or the breed of animals with which he is working. Practical men have realized for generations that it was a profitable thing to use the best individuals in a herd to breed from. The fact that there is as much individuality in plants, that ears of corn, for example, differ as much in their productive power and breeding characteristics as do animals, has not seemed to be generally recognized, or, if recognized, the knowledge has not been made good use of. Seed corn has been generally planted without respect to the region in which it grew, its productive ability or even its germinating power.

A simple problem in mathematics will show how important it is that in any attempt to improve corn a good individual kernel should be used to start with. One kernel of corn produces an ear. An ear of corn, according to type and variety, will contain from 400 to 1,200 kernels. Taking 800 kernels as an average for an ear, these 800 kernels may reasonably be expected to produce 800 stalks, which, counting 1 ear to a stalk, gives 800 ears in the second generation. Each of these 800 ears, if properly handled, may be expected to produce 800 ears in the third generation. Then in three years there would be produced from the one kernel 640,000 ears, or approximately 8,000 bushels. A farmer, then, can modify to a great extent the quality, yield and all-round general characteristics of his crop by beginning right, with good seed.

It is not expected, or even wise to advocate, that every farmer shall be a corn breeder, but there is need of developing in New England strains of corn which will be adapted to the soil, length of season and the demands of our New England agriculture. No doubt a considerable number of farmers will attempt to improve strains of corn in the future, and these simple directions are given for their benefit. Improving corn does not involve a knowledge of plant breeding. Great advancement can be made by simple selection. Any man with a keen eye, a desire to improve the corn and an ideal to work toward may expect to be well repaid for his time and labor.

The writer would not overlook the fact that proper soil, climatic conditions, manuring, fertilizing and proper methods of culture are all extremely important, but the limits of this paper prevent a discussion of these at this time.

As has already been stated, good seed is the first and fundamental step in corn improvement. Uniform ears, straight rows, large size of ear, high percentage of corn to the cob and other points, considered on a score card at a show, may all be valueless when productive power is considered, and the whole purpose of corn improvement is more ears or more fodder to the acre.

Before any attempt is made to improve a plant some knowledge of the character and habits of the plant should be acquired. With corn

one should understand a few of the botanical characteristics of the plant, the way the ears are formed, the root system, etc. The corn plant varies in height, according to type and the geographical region in which it grows, from $1\frac{1}{2}$ feet to perhaps 25 feet. On the stalk are to be found joints or nodes, and if the stalk is cut crosswise above one of these joints there will probably be found an embryonic ear, which would seem to show that the original habit of the plant was to produce a small ear at every joint. The silk is the female organ of reproduction, the tassel, the male organ of reproduction, containing the pollen, which is shaken and blown about, falling on the silks (pistils) and fertilizing them. The fact that there is so much pollen produced by the tassels and this is blown about by the wind, or carried over considerable distances by other agencies, accounts for corn "mixing" so badly. It is not safe to plant two distinct types nearer than 20 rods of each other, and even at this distance considerable cross-fertilization may take place. To avoid "inbreeding" and to cause cross-fertilization sometimes every other row in a breeding plot is detasseled.

Corn plants have two root systems, one consisting of coarse strong roots, coming off at a little distance above the ground, which act as braces for the plant. The other is the fibrous root system, which grows underneath the soil, taking nourishment for the plant. A knowledge of how this last root system places itself in the soil will aid in deciding the kind of cultivation to produce. Deep cultivation after the plants are started destroys this feeding root system, lessening the growth of the plant, as well as allowing great loss of soil moisture.

Another point which must not be overlooked, but which will not be discussed at length, is uniform stand. It is an easy thing, by careless planting or by using poor seed, to lose 10 per cent or even 20 per cent of the hills or bearing stalks in the hills. This loss may mean the net profit which might have been obtained with the same amount of land, labor, fertilizer and cost of growing the crop. Care should be taken to have no vacancies in the field or barren stalks in the hills. Without a uniform stand a good yield cannot be expected.

Corn may be selected to increase strength of plant, yield, early maturity, size of ear, content of starch or protein, position of ear on the stalk, amount of leaf, if for silage, and for other desirable characteristics. It is not possible to select for many of these characteristics at the same time.

For New England it is probably best not to go too far from home for a type with which to begin. The mistake is too often made of sending for seed to regions where entirely different climatic conditions prevail than those under which the crop is to be afterwards grown. Care should be taken to select a type that will be worthy of improvement. Get as pure a strain as possible; one adapted to your region, and one that will mature in an average season. Oftentimes seed can

be secured from some one who has already spent several years in doing the preliminary work necessary to establish a strain and fix a type. Secure seed from such whenever possible. It will save years of your own time.

This may seem like a paradoxical statement, but the time to begin to grow corn is in the late summer or early fall. Seed corn should also be selected in the field. By so doing the character and strength of the plant, the position of the ear on the stalk, the way it hangs, early maturity, and all the other desirable characteristics which make the ear a desirable one, under growing conditions, may be taken into consideration. When corn is selected from the crib none of the factors which enter into the growth under field conditions are known. One must be guided by external characteristics, and these are not sufficient. Never buy seed corn shelled which you expect to improve. In this condition even the kind of ear that produced the corn is not known. Let the corn become perfectly mature in the field before harvesting.

Much of what might otherwise have been good seed corn is ruined in storing and curing. When taken from the field ear corn contains 25 per cent to 35 per cent moisture. If allowed to freeze while containing this amount of moisture the vitality will be greatly lessened, if not entirely ruined. Therefore the corn must be thoroughly dried before freezing.

After it is properly dried it should be stored in a dry place, and no natural temperature will harm it. It should be either placed in racks or hung up in small traces. Do not shell or place in boxes or barrels. Considerable more corn should be saved early in the fall than will be needed, in order that more careful selection may be made later.

While the external characteristics of an ear may be used for the preliminary work of selection, these are not sufficient to determine whether corn is fit for planting or not. In other words, the first prize ear in a corn show may be no better and often not so good as some other good ear. An ear of corn to be used for seed should be required to answer for itself the following questions: Will it grow? Will it mature? Has it constitution? Has it breeding characteristics? None of these important questions can be answered without at least testing the ear in two ways.

First, the simple germination test may be applied. Where quite a number of ears are to be tested a box 20 inches by 20 inches and 3 inches deep can conveniently be used. Mark off the box, with strings, into squares 2 inches on a side. Fill the box level full of sawdust or sand. Number each ear and each square of the germinating box. Place five or six kernels from ear No. 1 in space No. 1, and a similar number of kernels from the other ears in corresponding spaces. Place the germinating box in a temperature of about 70° to 75° F. Keep

the sand or sawdust moist. As germination takes place you will no doubt find many ears showing weakness or poor germinating power, and they should be discarded at once.

Sometimes corn that will germinate will not grow well under field conditions. So in any effort to improve corn the desirable ears retained from the germination test should be tested in the field. The most convenient method is by what is called the "ear row test." This consists in planting row No. 1 with corn taken from ear No. 1, row No. 2 with corn from ear No. 2, etc. Plots of any desired size may be arranged, and while much more elaborate systems of plot tests have been recommended, for the average farmer the above will be sufficient. The plot used for this purpose should be given the best of preparation, fertilization and care throughout the season, giving the corn every possible chance. Before the pollen begins to scatter, all weak and barren stalks should be removed. Half of each row may also be detasseled before the fertilization of the silk takes place, to prevent inbreeding. Seed ears for another years' crop may be selected from this plot and cared for as before described, and marked improvement should be the result.

The operations described are simple, the work is extremely interesting, there is need of such work, and those who carry it on will find ready sale for their product at prices far in advance of those usually secured.

SELECTION AND PREPARATION OF CORN FOR SHOW.

For purposes of exhibition corn is now usually shown in single-ear, ten-ear or eighty-ear (approximately a bushel) lots. The ten-ear sample, the one most commonly used, is of convenient size to be easily judged, and is of sufficient size to show a fair sample of what the crop really is.

Numerous score cards have been devised for corn judging. Necessarily each varies with the ideas of the different persons who compile them. A score card, however, aids the judge in keeping all the important points in mind. It establishes a uniform basis for study and comparison, and prevents laying undue stress on certain points to the exclusion of others. The use of a corn score card requires judgment, the same as for fruit, live stock, milk or other products. Score cards differ for different sections. Obviously, the same score card should not be used on corn or the type grown in New England as for that grown in Iowa or Missouri. In order to formulate a score card for New England corn the officers of the New England Corn Exposition appointed a committee to consider this matter. After consulting about twenty authorities on types of corn the following score cards for dent and flint corns have been decided upon. These will be used in judging the corn at the exposition this fall.

<i>Score Card, Flint Corn.</i>								<i>Perfect Score.</i>
<i>Points.</i>								
1. Maturity and seed condition,	.	.	.	.	.	.	.	20
2. Uniformity,	.	.	.	.	.	.	.	15
3. Kernels,	.	.	.	.	.	.	.	15
4. Weight of ear,	.	.	.	.	.	.	.	10
5. Length and proportion,	.	.	.	.	.	.	.	10
6. Butts,	.	.	.	.	.	.	.	10
7. Tips,	.	.	.	.	.	.	.	5
8. Space between rows,	.	.	.	.	.	.	.	10
9. Color,	.	.	.	.	.	.	.	5
Total,	.	.	.	.	.	.	.	100

<i>Score Card, Dent Corn.</i>								<i>Perfect Score.</i>
<i>Points.</i>								
1. Maturity and seed condition,	.	.	.	.	.	.	.	25
2. Uniformity,	.	.	.	.	.	.	.	15
3. Kernels,	.	.	.	.	.	.	.	15
4. Weight of ear,	.	.	.	.	.	.	.	15
5. Length and proportion,	.	.	.	.	.	.	.	10
6. Butts,	.	.	.	.	.	.	.	5
7. Tips,	.	.	.	.	.	.	.	5
8. Space between rows,	.	.	.	.	.	.	.	5
9. Color,	.	.	.	.	.	.	.	5
Total,	.	.	.	.	.	.	.	100

Explanation of Score Cards.

Of course some difference must be made in judging dent and flint corn. The following explanation of the points are made to guide the growers in selecting their corn for exhibition purposes this fall:—

1. *Maturity and Seed Condition.*—This is perhaps the most important point on the score card. Corn is worthless, economically speaking, if it will not grow. The ears should be firm (try twisting in the hands) and free from mold. They should have a bright luster. There should be no chaff or silks adhering. The germs should not be shrunken or blistered, and the sample should show an all-round healthy, vigorous appearance.

2. *Uniformity.*—Uniformity and trueness to type are usually considered together. Few types are recognized in the west. It is hard to determine what a "type" of New England corn is. The ears should be similar in length, shape, size and color, indentation of kernels, etc. Uniformity in an exhibit would go to show that the corn was sufficiently developed so that the type had become somewhat fixed and stable.

3. *Kernels.*—Of course here again an entirely different basis must be used for dent and flint corns. The kernels should be uniform and slightly wedge shaped. (Judges remove a few kernels from different parts of the ear to determine this.) The shape of the kernel determines

to a great extent the amount of corn on the cob, lost space between rows, also chemical composition. Kernels with much starch are rich in carbohydrates; those having a larger germ are rich in oil. The kernels should possess germs of good size. Kernels of uneven size do not work through corn planters with uniformity. The edges of the kernels should be straight and fit closely together; they should be of uniform thickness. The rows should also be straight.

4. *Weight of Ear.* — In this score card this item takes the place of "proportion of corn to cob" in other score cards. Dry cobs do not vary much in weight, and it is much easier for a judge to weigh the ears than to have two or three out of ten shelled and the proportion of corn to cob determined in this way. The weight of shelled corn per acre is the important point. Here again there is a wide difference between dent and flint corns. Dent ears may weigh 16 ounces or more, and are usually produced one on a stalk. Flint ears weigh 8 ounces to 10 ounces, and more than one ear is commonly produced on a stalk.

5. *Length of Ear and its Proportion.* — The size of ears of corn vary considerably with the locality, soil, etc., so it is hard to fix a standard of length. Dent varieties should be $9\frac{1}{2}$ inches to 10 inches long. Flint varieties may be 11 inches to 12 inches long. Some varieties of both types may be smaller. In dent corn the circumference of the ears taken 2 inches above the butt should be about two-thirds the length. Ears with too large a circumference for their length are slow to mature. Ears should not be too tapering. Nearly cylindrical ears are desirable. Ears should be full and strong in the central portion.

6. *Butts.* — Large yield to the acre depends on having the butts and tips well filled out. The kernels should be uniform in size and well arranged around the butt, surrounding a cup-shaped cavity. The butt of the ear should not be too large, neither should it be so small as not to support the ear well when it is hanging on the stalk. Butts should be somewhat expanded but not too large.

7. *Tips.* — Should be well covered with kernels of uniform size and in rows which are a continuation of those on the ears. Poor tips may be caused by an unfavorable season. Tips well filled out show good breeding and a larger amount of shelled corn to the acre.

8. *Space between the Rows.* — Much space between the rows reduces the proportion of shelled corn. The shape of the kernels, the straightness of the rows, both at the base end of the kernel and on the exterior, should be very slight.

9. *Color.* — The color of the kernels should be uniform and of a bright luster, showing good condition. White or black kernels in yellow corn should be severely cut and *vice versa*. Too many mixed kernels may disqualify the exhibit. Missing kernels may be taken to mean that those originally occupying the vacant spaces were off

color. The cobs should all be of the same color. Usually white corn has white cobs. Red cobs in yellow corn are preferred. Variation in color of cobs shows mixture and poor breeding.

PREPARATION OF THE CORN FOR EXHIBITION PURPOSES.

After the corn has been carefully selected, according to the points given in the foregoing score cards, it should be carefully stored, so that the ears will not become broken or otherwise injured. Keep it in a place where the luster will be maintained. It is just as allowable to "groom" an exhibit of corn and otherwise make it look well for exhibition purposes as it is to place animals in "show condition." All silks, chaff, etc., should be carefully removed. The butts may be trimmed to give them as neat an appearance as possible. Any attempt to improve a sample by removing kernels and inserting others should meet with a disqualification of the exhibit. In shipping, each ear should be wrapped separately, and should also be plainly marked with a small tag fastened into the butt with a tack or small nail.

The whole exhibit should be properly labeled in accordance with the regulations which are laid down by the officers in charge of the corn exposition to which the corn is sent.

SERIES OF 1910.

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MASSACHUSETTS CROP REPORT

FOR THE

MONTH OF JUNE, 1910.

ASPARAGUS GROWING.

*ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.*

J. LEWIS ELLSWORTH, *Secretary.*

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CROP REPORT FOR THE MONTH OF JUNE, 1910.

OFFICE OF STATE BOARD OF AGRICULTURE,
BOSTON, MASS., July 1, 1910.

With this report for June, the second issue of the season, the crop reporting work of the year enters upon the season of the greatest change and development in farm crops. The period of planting and germination has passed, while that of harvesting has not begun, except in the case of a few very early market-garden crops and fruits and berries.

During the past year or more this Board has had a great many inquiries as to methods of growing asparagus, which we have been unable to answer as we had no literature on the subject. To meet this demand we have arranged for an article on "Growing and marketing asparagus," by Mr. Frank Wheeler of Concord, Mass., which appears at the close of this issue. Mr. Wheeler is counted by many as the best grower of asparagus in the State, and he has certainly prepared a very valuable article on the subject, intensely practical and without rhetorical embellishments, but containing a great deal of information on those points of interest which relate to the practice of growing a crop rather than to the scientific side of the question.

PROGRESS OF THE SEASON.

The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture estimates the area sown in spring wheat to be about 19,742,000 acres, or 1,349,000 acres (7.3 per cent) more than that sown last year. The condition of spring wheat on June 1 was 92.8, as compared with 95.2 on June 1, 1909, 95 in 1908, and 93, the June average of the past ten years. The condition of winter wheat on June 1, was 80, as compared with 82.1

on May 1, 80.7 on June 1, 1909, 86 in 1908, and 81.9, the June average of the past ten years.

The condition of rye on June 1 was 90.6, against 91.3 on May 1, 1910, 89.6 on June 1, 1909, 91.3 in 1908, and 89.9 the June 1 average of the past ten years.

The area sown to oats is about 34,380,000 acres, or 1,176,000 acres (3.5 per cent) more than the area sown last year. The condition of the crop on June 1 was 91, as compared with 88.7 on June 1, 1909, 92.9 on June 1, 1908, and 88.4, the June 1 average of the past ten years.

The area sown to barley is about 7,057,000 acres, or 46,000 acres (.7 per cent) more than the area sown last year. The condition of the crop on June 1 was 89.6, as compared with 90.6 on June 1, 1909, 89.7 on June 1, 1908, and 90.5, the June 1 average of the past ten years.

The condition of meadows (hay) on June 1 was 86.1, against 89.8 on May 1, 1910, and 87.6 on June 1, 1909.

The condition of pastures on June 1 was 88.5, against 89.3 on May 1, 1910, 89.3 on June 1, 1909, and 90.9, the June 1 average of the past ten years.

In Massachusetts the acreage of oats compared with last year was given as 101 and the condition as 97; the condition of rye as 96; the condition of hay as 96; the condition of pasture as 96; the production of asparagus as compared with a full crop as 87; the condition of apples as 83; the condition of peaches as 68; the condition of pears as 86; the condition of blackberries as 91; the condition of raspberries as 92; the condition of cantaloupes as 87; the condition of Lima beans as 90; the condition of cabbages as 90; and the condition of onions as 91.

TEMPERATURE AND RAINFALL FOR THE WHOLE COUNTRY.

[FROM NATIONAL WEEKLY WEATHER BULLETIN.]

Week ending June 6.—The temperature conditions showed marked contrasts, very high temperatures prevailing in the southern districts west of the Rocky Mountains, which spread gradually to the Great Plains region and the Gulf States. In marked contrast the entire northern and central portions of the country east of the Rocky Mountains

experienced unusually cold weather, with temperatures at or below freezing at numerous points along the northern border. The averages for the week ranged from 6° to more than 15° below the normal. West of the Rocky Mountains the mean temperature was above the normal. A considerable rain moved from the Lake region and Middle Atlantic States to the New England coast the first two days in the week, with heavy falls also in the lower Mississippi valley and in Texas. A second storm developed in the Rocky Mountains, and the week closed with general rains over all districts to the eastward.

Week ending June 13.—Cool weather opened the week in the upper portions of the Mississippi and Missouri valleys, with warmer, cloudy weather to the eastward. The cool weather moved slowly eastward, diminishing in intensity, and was followed by warmer weather, with cloudy and rainy conditions for the latter part of the week. The mean temperature of the week continued below normal for practically all districts east of the Rocky Mountains. Warm weather continued over the southern portions west of the Rocky Mountains, with more normal conditions over the northern portions. The total precipitation for the week averaged about 2 inches over the eastern portion of the Great Plains and from the middle Mississippi valley eastward to the Atlantic coast, as far north as southern New England. Over the upper Mississippi valley and the upper Lake region the precipitation for the week was very light.

Week ending June 20.—A change from the decidedly cool weather that had prevailed over the central valleys to weather more nearly normal began the first of the week, and as the week advanced, higher temperatures overspread practically all portions of the country east of the Rocky Mountains. Over the Pacific coast States, however, the high temperatures formerly prevailing gave way to cooler weather. The rainy conditions prevailing over the Atlantic coast districts at the end of the previous week persisted during the most of this, with decidedly heavy falls over the headwaters of the Potomac and other rivers from Maryland and West Virginia southward to the Carolinas. The precipitation

elsewhere in the country was universally less than the average, the deficiency amounting to about 1 inch over the great central valleys.

Week ending June 27. — High temperatures continued in the districts east of the Rocky Mountains until the middle of the week, temperatures of 100° or above being reported in the Dakotas on Monday. Temperatures were from 3° to 12° above the normal for the week from the Missouri valley eastward to the Middle Atlantic States and New England. Cooler weather set in on the North Pacific coast about the first of the week and moved slowly eastward, reaching the Great Plains States by Wednesday. No well-defined storm area developed in the United States during the week and such precipitation as occurred was local in character. The amounts were below normal over the greater portion of the country, except over the major portion of the Gulf States and at scattered points elsewhere, the Great Plains States, and locality in the Mississippi valley, Maine and the Carolinas.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending June 6. — New England. Boston: There was much cloudy weather, with showers, during the week. The rainfall was generally above normal, and the temperature moderate. Frosts were general in the interior Saturday morning. Sunshine and higher temperatures needed.

Week ending June 13. — New England. Boston: There was very little sunshine during the week, and the precipitation was much above normal, particularly in the southern portion. Temperatures were moderate.

Week ending June 20. — New England. Boston: The week was generally cloudy, with frequent showers, giving precipitation generally above normal. The last two days were fair and warm, which conditions were much needed.

Week ending June 27. — New England. Boston: Generally fair and warm weather prevailed through the week, being very beneficial. The precipitation was light and confined to local showers.

WEATHER OF JUNE, 1910.

The temperature of the month was somewhat below the average for June, and there was quite a marked excess in the rainfall during the month. Rain was of almost daily occurrence during the first twelve days of the month, with a general and heavy rainstorm on the 10th, 11th and the 12th. The rainfall during the remainder of the month consisted of well-distributed showers. The total precipitation for the month ranged from 1 to 2 inches above the normal. The temperatures throughout the month were unusually even, there being no marked extremes in the maximum or the minimum temperatures. During a warm period from the 20th to the 23d the maximum temperatures ranged from 88° to 94°, but with slight exceptions in some localities the temperatures did not rise to 90° through the rest of the month. The first week of the month was unseasonably cool, with the night temperatures near 50° or slightly below, and the day temperatures rising but little if any above 75°. There was an unusual prevalence of cloudiness, the skies being overcast on twelve days, partly cloudy on eleven days and clear on seven days. The winds were light and variable, and in coast sections there was more than the average amount of fog. The abundant rainfall was very beneficial to agricultural interests, but higher temperatures with more sunshine would have been a decided improvement.

In the circular to correspondents, returnable June 24, the following questions were asked: —

1. What insects are proving injurious in your locality?
2. How is Indian corn looking, and what is the acreage as compared with previous years?
3. Has haying begun, and what is the prospect for the crop?
4. How does the acreage of early potatoes compare with previous years, and what is the promise for the crop?
5. How do early market-garden crops compare in yield and price with former years, and what is the prospect for those not yet harvested?

6. How do the quantity and price of dairy products and the supply and price of dairy cows compare with former years?

7. What is the condition of pasturage in your locality?

8. What is the outlook for such fruits and berries as are grown for market, naming them?

Returns were received from 145 correspondents, and from these the following summary has been compiled:—

INSECTS.

Insects do not appear to be unusually numerous or injurious. The usual variety are reported as present. Cut worms and plant lice appear to be rather more troublesome than usual, while tent caterpillars and canker worms are rather less so. Wire worms are also mentioned as doing considerable damage in corn fields in some cases. Gypsy and brown-tail moth caterpillars are reported by a steadily increasing number of correspondents each year. Other insects mentioned are potato bugs, cabbage worms, squash bugs, striped cucumber beetles, onion maggots, currant worms, white grubs, rose bugs, flea beetles, spittle insects, cranberry insects and the San José scale.

INDIAN CORN.

The great increase in the acreage of field corn indicated by the returns for May will hardly be realized, owing to failure of germination in some cases and in others to fields intended for corn having been planted to other crops, because of the delay caused by the continued wet weather. Nevertheless, the reports indicate that the acreage will be considerably increased over any previous year, more than half of the correspondents reporting an increase, ranging from "slight" to over 50 per cent. The reports of decreased acreage are so few that they may be disregarded in making estimates for the State as a whole. The crop is very uneven, having to be replanted in many cases, either in whole or in part, and has suffered from wire worms in some sections, making the stand rather poor as a whole.

Numerous correspondents report that the crop has been yellow in color, but that it is rapidly improving, with the advent of warm weather, and there is general agreement that the crop is backward for the time of year.

THE HAY CROP.

Haying was just beginning in many sections at time of making returns, and the indications were that it would be well under way, for the State as a whole, by the first of July. A good normal crop is likely to be gathered. New seeded fields are generally reported as unusually heavy, and old, infertile fields as light, owing to the drought of the last two seasons, from which such fields have not recovered. It is seldom that even a fair crop is secured on such old fields, a partial failure being the rule, so that their present condition is of less importance for purposes of comparison than would appear at first thought. The warm, sunshiny weather of the past ten days has been just what the crop needed to mature it and improve the nutritive quality of the grasses.

POTATOES.

The acreage of strictly early potatoes appears to be about the same for the State as in previous years, comparatively few growers devoting much attention to the early varieties. The acreage of potatoes as a whole appears to be decreased to a considerable degree, due largely to the low prices for last year's crop. Our Massachusetts farmers apparently pursue a more erratic policy with this crop than with any other which they grow. The crop was generally backward at time of making returns, due to the cold wet weather, and there were some complaints of failure to germinate from the same causes. The vines generally look well and promise good yields, with favorable developments for the remainder of the season.

EARLY MARKET-GARDEN CROPS.

Early market-garden crops were delayed by cool weather, and in some cases had not been marketed at time of making returns. The yields were not above the average, in some

cases being below average, and good prices were realized. In some sections they suffered severely from the heavy frost of the first week in June. Asparagus suffered from frost and was a light crop in most sections. Later market-garden crops are reported as promising good yields.

DAIRY PRODUCTS AND DAIRY COWS.

The supply of dairy products seems to be fully up to the normal, with a good flow of milk, and the demand to be fully equal to the supply. Prices have been higher than ever before. This is especially noticeable in those sections which do not produce milk for the Boston market. Whether this is a result of the "milk war," or of the conditions leading to it, or both combined, is an interesting question. With improved conditions in other sections the increased price promised the producers for the Boston market for July and August would seem to be fully justified. Dairy cows are reported as very scarce and unusually high in most cases. With the present price of butter and dairy cows, old-fashioned dairying, with butter production and the breeding of cows for sale, would seem to be the most profitable line to follow.

PASTURAGE.

The frequent rains and numerous cloudy days have kept feed in pastures green and growing, and it is in excellent condition at present. There is almost no complaint of short pasture. That a drought later in the season would have a more injurious effect than would be expected from the present condition is probable, as pastures can hardly have recovered permanently from the conditions of the past two years.

FRUITS AND BERRIES.

The strawberry crop suffered severely from the rains, many berries rotting on the vines, and there was more complaint of frost damage than would have been expected from the reports of last month. The crop in general was a light one. Excellent prices were received as a rule. Other berries are reported as having bloomed full and as promising good yields.

Apples are receiving more attention than ever before, more farmers having sprayed their trees and taken generally better care of them, and at least an average crop is looked for. The same is true, so far as the returns indicate, for pears, plums and quinces. Some good observers report, however, that the set of fruit was not what would naturally have been expected from the abundant bloom. No one suggested a reason for this condition. Cherries are generally a good crop. Cranberries were not in bloom at the time of making returns, but the vines were reported as in good condition and promising well.

NOTES OF CORRESPONDENTS.

(Returned to us June 24.)

BERKSHIRE COUNTY.

New Marlborough (E. W. RHOADES). — The ground seems to be full of white grubs and the second brood of currant worms is hatching. Corn is coming along slowly with a large acreage planted. A large hay crop is in sight, but it needs two weeks of sunshine. There is about the usual acreage of early potatoes and they look promising. Garden crops are somewhat late, but are growing fast now. Milk and butter are being produced in large quantities; cows are scarce and high. Pastures are in fine condition. There are big crops of strawberries and red raspberries, also some cherries.

Alford (LESTER T. OSBORNE). — Indian corn has been very backward, but has improved rapidly during the past week; acreage much above the average. Few have commenced haying, but the prospect is the best for some years. The acreage of early potatoes is about the same as usual, but they have been kept back by cold weather. Early market-garden crops are rather below average. Quantity and price of dairy products rather above previous years; supply of cows short and many picked up by dealers. Pastures are in perfect condition. But few fruits and berries are raised for market and the outlook is average, except for apples, which seem much below. Oats and grass are beginning to lodge and need much more sunshine and dry weather.

Tyningham (EDWARD H. SLATER). — Potato bugs are doing considerable damage. Indian corn is very backward, but the acreage is somewhat larger than in previous years. No haying has been done as yet, and the crop will be about average. The acreage of potatoes compares favorably with former years. The quantity and price of dairy products are about the same as a year ago. Pastures are in fair condition. Berries are not grown for market to any extent.

Becket (Wm. H. Snow). — Tent caterpillars and potato bugs are doing some damage. Indian corn is small and late, but the acreage is fully up to the average. The acreage of early potatoes is decreased and the crop looks poorly, owing to wet weather. Early market-garden crops are late, and prices are correspondingly good at present. Quantity and price of dairy products good; cows scarce and high.

Pasturage is in very good condition. The outlook for fruits and berries is very good, though some were injured by frost. The ground is cold and wet; some have not finished planting, and but little hoeing has been done.

Richmond (TIMOTHY B. SALMON). — Potato bugs are doing some damage. Corn is mostly small, and the acreage is below previous years, as a large part of that planted did not germinate well. Haying has not begun, but the prospect for the crop is good. There is about the average acreage of early potatoes, and they are backward. Quantity and price of dairy products above average; cows are scarce and high in price. Pasturage is in very good condition. Cherries are an average yield; raspberries and strawberries very good.

Hinsdale (THOS. F. BARKER). — Potato bugs and cabbage worms are doing some damage. The acreage in Indian corn is about the same as usual, but much had to be replanted and it is late. The acreage of early potatoes is about average. Early market-garden crops are average in yield and price. The prices for dairy products and dairy cows are higher than usual. Pastures are in good condition. Strawberries are an average crop; apples, pears and cherries promise well.

Hancock (B. H. GOODRICH). — Potato bugs and squash bugs are doing damage. Corn is looking poorly; acreage normal. Haying has not begun; crop heavy, but somewhat more weedy than usual. More potatoes than usual have been planted, and they are in good condition though backward. Garden crops show the effects of cool, wet weather. The supply of dairy cows is limited, and prices high. Pasturage is in excellent condition. Apples, pears and strawberries promise fine crops.

New Ashford (WALTER P. SMITH). — Onion maggots, tent caterpillars and maple beetles are doing damage. Indian corn is about two weeks late, but the acreage is about average. Haying has not begun, but a better yield is promised than for the past two years. Early potatoes are not raised to any extent. Quantity of dairy products increased; cows high, and none for sale. The season is too backward to report on fruits and berries. Pastures show the effect of two years' drought, but are much improved by the rains. All hoe crops are now very weedy.

Williamstown (S. A. HICKOX). — Potato bugs and currant worms are doing some damage. The acreage of corn is increased 25 per cent, but the crop is backward because of cold weather. Haying has begun, and promises 95 per cent of a normal crop. Early potatoes are in good condition. Early market-garden crops are late but good. The quantity and price of dairy products are better than last year; and dairy cows are from \$10 to \$15 per head higher than last year. Pasturage is in very good condition. Strawberries are a full crop; apples promise 80 per cent; pears, 50; cherries, 60.

FRANKLIN COUNTY.

Rowe (HENRY D. WRIGHT). — Tent caterpillars are doing some damage. Corn is backward, with the acreage about the same as last year. No haying has been done as yet, but the crop will be a third larger than last year. There is the normal acreage of early potatoes, and they are in fair condition. Market-garden crops are little grown. Dairy products are higher in price than usual, also dairy cows. Pastures are in good condition. Strawberries are a good crop; no other berries grown for market. The wet weather has kept crops back, especially corn.

Colrain (W. H. DAVENPORT). — Small flies are injuring the leaves of garden truck. Indian corn looks well, but is a little backward; acreage fully up to the normal. Haying is just beginning with a fair crop, slightly above the average. The acreage of early potatoes is about as last year; vines a little backward. Gardens are decidedly late. Prices for dairy products a little better than formerly; cows scarce, and bringing high prices. Pasturage is in excellent condition. Apples have received better care than ever before and look well. The cold weather and rains made planting late.

Bernardston (R. H. CUSHMAN). — Indian corn is now growing well, and the acreage is fully average. Not much haying has been done, but the outlook is very promising, though more sun is needed. All potatoes show an uneven stand, but a large acreage has been planted. Milk and butter prices range well up, and dairy cows, and in fact all stock, are scarce and high in price. Cloudy weather and frequent showers have made pasturage about O. K. Strawberries need more rain; all berries promise full crops; apple will not be a large crop.

Shelburne (W. J. PURINGTON). — Potato bugs are the most injurious insect. Corn is rather small for the time of year, with the usual acreage. Not much haying has been done as yet, but the prospect for the crop is good. The acreage of early potatoes is about the same as usual, and they are looking fairly well. Early market-garden crops are normal in yield and price. The quantity and price of dairy products is better than last year's; cows scarce and high. Pastures are in good condition. Berries will give good yields; apples promise fairly well; other fruits very good.

Whately (C. L. CRAFTS). — Wire worms are doing considerable damage. Corn is uneven, owing to wire worms, but the acreage is increased. Haying is just beginning, with a heavy crop in prospect. Early potatoes are about average as to acreage and look fairly well. Early market-garden crops made light yields, with the usual prices. Cows are very high, and dairy products low in price. Pastures are in good condition. Raspberries are a good crop; other fruits little grown for market.

Montague (A. M. LYMAN). — Cut worms are doing much damage

in tobacco fields, and both black and striped squash bugs are plenty. Corn is uneven, much having to be planted over, and is all the way from just coming up to a foot high; acreage increased. Only a few fields of hay have been cut, but the prospect is good. There is about the usual acreage of potatoes, and they are looking well, especially early ones. Early market-garden crops promise extra yields. Prices of dairy products are well up, and extra cows are good property. Pasturage is above the average in condition. Strawberries are a little late, but a fine crop; other berries promise well.

Northfield (THOMAS R. CALLENDER). — Cut worms are more troublesome than usual. Corn is small and backward; acreage certainly one-third above the average. Grass is the best crop in many years and some clover has been cut. The crop of early potatoes is looking well, with about an average acreage. The prospect is good for all market-garden crops. Dairy products and dairy cows are both high and scarce. Pasturage is in better condition than usual. Strawberries were somewhat injured by late frost; other small fruits heavily set.

Wendell (N. D. PLUMB). — Indian corn is somewhat backward, but the acreage is the largest for a decade. The hay crop will be normal, and haying will begin about July 1. Early potatoes were badly cut by the frost, and will be about half a crop. Dairy products are ten per cent higher than formerly, and dairy cows are about normal in supply and price. Pasturage is in good condition. Blueberries are principal berry crop with us, but were injured by frost on low lands.

New Salem (DANIEL BALLARD). — Cut worms have been quite numerous and troublesome. Indian corn is coming forward with the advent of warm weather, with somewhat increased acreage. The hay crop will be good, and some are beginning to cut. There is the usual acreage of potatoes, and they look promising. Not much is done with early market-garden crops. Dairy products and dairy cows are fully up to the average in supply and price. Pasturage is in good condition. There is a fair crop of strawberries, and some are grown for market.

HAMPSHIRE COUNTY.

Enfield (D. O. CHICKERING). — Cut worms and potato bugs are doing damage. Indian corn is somewhat backward, but is growing rapidly now; more than usual planted. Haying has just begun; new seeding good, old fields light. There is about the usual acreage of early potatoes, but late frosts and cold weather have kept them back. Dairy products and dairy cows are somewhat above the average in quantity and price. Pasturage is in fine condition. The outlook is good for apples, except where late frost injured the bloom.

Pelham (JOHN L. BREWER). — Small black beetles are doing damage to crops. Indian corn is looking poorly, and crows have been de-

structive; acreage about the same as in previous years. Haying will begin next week; prospect better than last year. Acreage of potatoes about as last year, and they are looking finely. Dairy cows are in good supply, and bring high prices. Pasturage is in good condition. Strawberries are a good crop, and blueberries and blackberries look well.

Amherst (W.M. P. BROOKS).—There is considerable complaint of damage from cut worms. The protracted, cool, wet weather held back corn, making replanting necessary in some cases; acreage about average. A very little haying has been done, and the crop will be average. There is the usual acreage of potatoes; a kind of stem rot is very injurious, killing out many hills, but they otherwise promise well. Early market garden crops are not important here, but are about average in yield and price. Quantity of dairy products about as usual; prices a little higher. Pastures are in good condition. Strawberries are nearly through, an average crop, but with much rot from wet weather; currants, raspberries and gooseberries promise finely; peaches and plums promise well; apples uneven, but there are many good trees where well cared for. Conditions have been fine for tobacco setting.

Hadley (L. W. WEST).—Wire worms and cut worms are doing damage. The stand of corn is good, but some fields are late. Haying has begun, with a little better than an average crop. The acreage of early potatoes is about average, and they promise well. Early market-garden crops are average in yield and price. The price of dairy products is above, and the supply below the normal; dairy cows higher than in former years. Pastures are in good condition. Strawberries, currants and blackberries are good crops.

South Hadley (W. F. PERSON).—Rose bugs are the only insects doing any damage. Indian corn is looking well considering the wet and cold weather, but will be late; acreage about normal. The prospect is for a good hay crop. Early potatoes are looking well, and a good crop is expected. Early market-garden crops are a little backward but bring good prices. Dairy products are bringing better prices than last year; cows about the same as usual. Pasturage is in good condition. Strawberries are a good crop, and the prospect is good for other berries.

Southampton (C. B. LYMAN).—Corn is backward and has been yellow, but is now turning a better color; acreage increased. A few have begun haying, and a fair crop is promised. Potatoes show a normal acreage, but have made a slow growth. Quantity of dairy products normal, and prices better than ever, the creamery paying 40 cents for butter fat. Supply of dairy cows small and prices high. The feed in pastures is above the average. Strawberries are a very good crop; blackberries bloomed very full; currants are looking very well.

Williamsburg (F. C. RICHARDS). — Cut worms and potato bugs are doing damage. The acreage of Indian corn is increased one-third; backward at present, owing to cool, wet weather, but with suitable weather will make a fine crop. Haying has begun on early fields, and a fine crop is in prospect. The acreage of potatoes is about normal, and they promise well. Quantity of dairy products about average; prices higher than formerly; supply of cows limited and prices high. Pasturage is good, but needs warmer, drier weather. All berries promise good crops; apples 75 per cent of normal; pears 65 per cent; peaches, 85 per cent.

Chesterfield (HORATIO BISBEE). — No insects are known to be doing damage. Indian corn is backward. Haying has not begun, but a big crop is in prospect. There is no perceptible change in the acreage of potatoes. Quantity and price of dairy products hold up well; cows are bringing high prices. Pasturage is in good condition. Fruits and berries are not much raised for market.

Plainfield (C. A. WILLIAMS). — Tent caterpillars, potato bugs and striped squash bugs are all doing damage. Corn is in good condition but backward; acreage quite a little increased. Not much haying has been done, and the prospect for the crop is good. The acreage of potatoes is about the same as usual, and they promise well. Quantity of dairy products slightly off, with prices higher than usual; cows scarce and high. The season has been favorable for feed in pastures. The apple crop promises to be good; berries and small fruits, such as peaches, plums and cherries, are doing well. All hoed crops are backward, owing to delay in planting due to unfavorable weather.

HAMPDEN COUNTY.

Tolland (E. M. MOORE). — Potato bugs, striped squash bugs and cut worms are very numerous this season. There is about the usual acreage of Indian corn, with some complaint of failure to germinate. No haying has been done as yet, but grass looks promising for a good crop. Dairy products are a little higher in price than formerly; but few good cows for sale and prices high. Pasturage is in good condition.

Blandford (ENOS W. BOISE). — There is considerable complaint of wire worms causing a poor stand in corn. The acreage of corn is average, but the crop shows a poor stand, is uneven and does not look well. Haying has not begun; new seeded heavy, out lots light. There is the usual acreage of potatoes. Early market-garden crops are not quite up to the average in yield and increased prices are asked. Quantity and price of dairy products fully up to normal; cows scarce and high. Pasturage is in good condition. Fruits and berries little grown for market; wild berries promise well.

Russell (E. D. PARKS). — Tent caterpillars are doing some damage. Indian corn is not very forward for this time of year; acreage fully as

large as usual. But little hay has been cut, and the prospect is good for the crop. There is about an average acreage of potatoes and they are looking very well. Market-garden crops are little raised here. The quantity and price of dairy products are fully up to the average, and good cows are high in price. Pasturage is in very good condition, and the rains have kept them green. The outlook for fruits and berries is very good.

Southwick (L. A. FOWLER). — Cut worms have been doing much damage. Corn is improving since the weather grew warmer; acreage increased. Haying has scarcely begun, but will be in full swing next week; prospect for the crop good. The acreage of potatoes compares favorably with former years, and they promise well. Dairy products are higher in price than formerly, and good milch cows are scarce and high. Pastures are in very good condition. Strawberries were a fine crop but rotted badly during the wet weather. Tobacco growers are through setting the plants and early set fields are looking finely.

West Springfield (N. T. SMITH). — Onion and cabbage maggots are doing some damage. The corn crop has improved with the hot weather, having looked poorly before its coming; acreage slightly increased. Little grass has been cut as yet; prospect for about an average crop. There is a slight decrease in the acreage of early potatoes; plants coming on finely. All garden crops are doing well. Dairy products and dairy cows are about average in yield and price. Pastures are in normal condition. Strawberries are a fine crop; all other small fruits promising; apples have set well and are doing nicely.

Chicopee (E. L. SHAW). — Cut worms, rose bugs and plant lice are prevalent. Indian corn is yellow and backward, owing to cool, wet weather; acreage about the same as usual. But little hay has been cut, and the crop seems likely to be heavy; sunshine will improve its quality. Few early potatoes are raised; growth good, but some signs of blight. Asparagus has been a light crop; other early market-garden crops normal. There is not an oversupply of dairy products, and prices are firm; good cows are higher than formerly. Pastures are in good condition. Strawberries are a fair crop; blackberries good; pears good; peaches few; apples promise only a small crop; fruit trees are dying from the San José scale.

Wilbraham (HENRY M. BLISS). — Insects are doing little damage. Corn is two weeks behind last year in development, but the acreage is increased ten per cent. Haying has not begun, but there will be a fair crop. The acreage of early potatoes is slightly decreased, and the crop is nearly up to the average. The quantity and price of dairy products is fully up to the normal, and dairy cows are very high, bringing \$50 to \$60 apiece. The late rains have improved the pastures. Strawberries are a full crop; apples promise nearly a full yield; other fruits normal.

Hampden (JOHN N. ISHAM). — There is very little damage from

insects thus far this season. Corn is looking well, with a larger acreage than in previous years. Haying has not begun in earnest, but a good crop is in prospect. There is about the usual acreage of early potatoes and they are promising. Early market-garden crops made fair yields, with good prices. Dairy products are slightly below average in quantity, but prices are higher; dairy cows are in good demand. Pastures are mostly in good condition. Strawberries are a short crop, but all other berries promise well; apples, pears, cherries and quinces are all looking well; apples did not set well, and some trees that made a good bloom show little fruit.

Palmer (O. P. ALLEN). — Very few insects are in evidence as yet. Indian corn is very backward, owing to cold, wet weather. Haying has not begun, but a good crop is in prospect. The acreage of early potatoes is about the same as usual and they promise well. Early market-garden crops are late, but promise well. There is very little change in the quantity or price of dairy products. Pasturage is in very good condition indeed. The outlook for fruits and berries is better than usual.

WORCESTER COUNTY.

Southbridge (E. T. TORREY). — Indian corn is looking well, with about the usual acreage. Haying has not begun, but the crop will be much larger than last year. Early potatoes promise a fair crop. Frost did considerable damage to early market-garden crops and prices are somewhat higher than usual; later crops look finely. The quantity of dairy products is about the same as usual, and prices are higher; cows are not as plenty as usual and bring higher prices. Pasturage is in extra good condition. Apples are dropping from the trees; strawberries are doing well; raspberries and blackberries promise well.

Charlton (LOREN E. STEVENS). — A small black bug is doing a great deal of damage in gardens. There is more corn planted than in previous years, and it is doing well. Haying has not begun, but there will be an average crop. Potatoes look well, with about the usual acreage. Dairy products compare favorably with other years in quantity and price. Pastures have never been in better condition. Strawberries are plenty; Baldwin apples will be a short crop. Garden stuff has grown very rapidly since the coming of warm weather; young trees and shrubs set this spring have also made rapid growth.

Brookfield (FRANK E. PROUTY). — Indian corn is about ten days late; acreage rather more than in former years. Some clover has been cut and the prospect for the hay crop is good. There is an average acreage of early potatoes and they promise well. Early market-garden crops are about average in yield and price. Dairy products are about average in quantity and price, and dairy cows are about the same as formerly in price and supply. Pastures are in good condition. Straw-

berries look well, also cherries; other fruits not developed as yet. Dairy cows would have brought higher prices except that the milk strike restricted the demand.

New Braintree (CHARLES D. SAGE).—Canker worms are doing some damage. Indian corn is looking fairly well; acreage about as usual. Haying has begun in a small way, and the prospect is very fair on new seeded fields. Early potatoes show about the usual acreage and are looking well. The quantity of dairy products is about as formerly, slight increase in price; cows high. Pasturage is in good condition. Fruits and berries are little grown, except apples, which promise fairly well. Crops are all very backward at present. Small brooks are low, needing more rain.

Barre (JOHN L. SMITH).—Insects are not especially troublesome. Indian corn is very backward, and has not made a good stand. A very little hay has been cut; new seeded fields are fine and old fields poor. Early potatoes are not raised to any extent. Both dairy cows and dairy products bring higher prices than formerly. June grass and clover are good in pastures just at present, but the other pasture grasses are in poor condition. There is every indication of a heavy crop of apples.

Hubbardston (CHAS. C. COLBY).—Cut worms are doing an unusual amount of damage. Early planted corn did not germinate well; a largely increased acreage was planted. Haying has not begun, but the prospects are for a heavy crop. There is about the usual acreage of potatoes, and they are at present in good condition. Conditions have been such that the number of dairy cows has been greatly reduced. Pasturage is in excellent condition. The outlook for apples is very good; only a very limited amount of small fruit is grown.

Templeton (LUCIEN GOVE).—Cut worms, squash bugs, potato bugs, currant worms and curculios are all doing damage. Corn is very backward, with the acreage somewhat increased. Haying has begun to a limited extent, and the yield promises to be rather better than last year. There is an average acreage of early potatoes, but the crop is quite backward. Asparagus was a light yield; early beets not up to normal; cabbages severely injured by worms; other crops promise fairly well. The price of milk is the same as last year; butter higher; dairy cows bring good prices. Pasturage is rather better than a year ago, owing to frequent rains. The prospect for apples is fairly good; plums light; pears fair; prospect fair for small fruits.

Royalston (C. A. STIMSON).—No insects are doing damage at present. Indian corn is small and backward, with about the usual acreage. Haying has not begun, but the prospect for the crop is good. There is about the usual acreage of early potatoes. Early market-garden crops are not raised here. Quantity of dairy products good, prices higher than formerly; cows in limited supply and prices high. Pasturage is in fine condition. Blueberries, blackberries, raspberries and strawberries promise full crops.

Gardner (W. E. KNIGHT). — Insects are not very active at present. Corn is small and yellow; the acreage was increased 20 per cent, but the crop is uneven and poor. Haying has not begun, but the crop promises to be above normal. The acreage of early potatoes is normal, and the prospect for the crop good. Prices of dairy products about the same as last year; cows are scarce and a good one will bring any price the owner asks. Blueberries, raspberries, currants and apples have set well and promise good yields.

Fitchburg (Dr. JABEZ FISHER). — Insects are doing little damage. Corn is a little late, but is looking well. Some early grass has been cut with prospect of an average hay crop. Pastures are in good condition. Strawberries and raspberries are quite promising; apples and pears look well, but do not carry out the promise of the great bloom.

Bolton (H. F. HAYNES). — Indian corn is in the poorest condition for years and is not all planted yet. Haying has not begun, but grass looks well. Potatoes have come up very uneven. Few early market-garden crops have been harvested as yet; asparagus has done well. Pasturage is in good condition. Fruits and berries do not look very well at present.

Northborough (J. K. MILLS). — Corn is backward, owing to the cold, wet spring, but is looking well. But little haying has been done, and there will be a good crop. There is a full acreage of potatoes and they are growing nicely. Early market-garden crops are about normal, and the prospect is good for those not harvested. Quantity and price of dairy products about the same as usual; milk will advance July first. Pastures are looking well. There will be a good crop of strawberries, and other fruits promise well.

Southborough (E. F. COLLINS). — The San José scale, potato bugs and cucumber beetles are doing damage. The acreage of Indian corn is average and the stand good, but the crop is rather backward. Some have begun haying, and there will be a large crop. The acreage of early potatoes was decreased, and they are rather backward. Most market-garden crops are late, but in fairly good condition. Cows are scarce and high; milk brings considerably higher prices than in former years. Pastures are in average condition. Apples will be a fair crop.

Mendon (J. J. NUTTER). — Elm leaf beetles and potato bugs are doing damage. Indian corn is looking very well, and more than an average acreage has been planted. Haying has not begun, but the prospect is good for a large crop. About the usual acreage of early potatoes is planted, and the early planted suffered from frost. Early market-garden crops are little grown. Dairy cows and dairy products are higher than usual. Pasturage is in good condition. Strawberries are a good crop, though somewhat injured by frost; apples promise well.

Milford (J. J. O'SULLIVAN). — Potato bugs are doing some damage. Indian corn is looking fairly well, with about the usual acreage. Haying has begun, and a fair crop is promised. The acreage of early

potatoes is about the same as usual, but they are in poor condition, owing to damage from frost. Early market-garden crops made a poor yield, with fair profits, and the prospect is good for later ones. Dairy products and dairy cows bring higher prices than formerly. Pasturage is in fair condition. Strawberries are a poor crop, owing to damage by frost.

MIDDLESEX COUNTY.

Holliston (L. E. LITTLEFIELD).—The gypsy moth and San José scale seem to be very injurious to fruit trees and the elm leaf beetle to shade trees. The acreage of corn is increased over previous years. Haying has not begun as yet, but there is prospect of a good crop. Early potatoes are not being raised as much as the later varieties. Early market-garden crops were badly injured by frost; yield will be light, but prices seem higher. Quantity of dairy products plentiful, and prices high; cows are very high in price. Pastures are very green, offering good grazing. Strawberries are plentiful; also blackberries, currants and raspberries, but peaches will be very light.

Sherborn (JOHN N. REID).—Elm leaf beetles, gypsy and brown-tail moths and the San José scale are doing damage. Corn is looking about normal, with the usual acreage. Haying has begun, but the crop is lighter than usual. The acreage of early potatoes is about the same as usual and they are looking well. Market-garden crops and prices are about the same as usual. The price of dairy products is higher than usual, and the quantity less; cows are scarcer than usual and prices higher. Pastures are looking very well. Apples are looking well; peaches about normal; strawberries gave a very poor yield of very poor quality.

Framingham (MERVIN R. PARSONS).—Brown-tail moths, cut worms and potato bugs are doing damage. Corn is late, but is growing well now; an increased acreage has been planted this year. No hay has been cut as yet; fields are looking well for a large crop. There is about the usual acreage of early potatoes, but they did not germinate well and look poorly. Early market-garden crops are little raised. Quantity and price of dairy products in advance of last year; dairy cows about as usual. Feed is very short in the pastures. Strawberries are almost a failure; apples and pears look well; peaches not more than one-fourth of an average crop.

Marlborough (E. D. HOWE).—Brown-tail moths and potato bugs are doing damage. Indian corn is slightly backward, with an increase of 5 per cent in acreage. Haying has begun and the crop is better than for two years past. There is no surplus in dairy products; cows are so high that they will soon be able to walk over the moon without jumping. Pastures are in good condition. Strawberries are selling well; raspberries made a fairly full bloom; currants promise a three-fourths crop.

Stow (GEO. W. BRADLEY). — Brown-tail moths, cut worm and potato bugs are doing damage. Indian corn is very backward; acreage about as last year. A few started haying this week, and a fair crop is in view. The acreage of early potatoes compares well with other years and they are looking quite well. The average of yields and prices is better than usual in the dairy business, except that dairy cows are scarce. The recent rains have brought the pastures into good condition. Strawberries and blackberries promise good crops.

Dunstable (A. J. GILSON). — Cut worms and both the black and striped squash bugs are proving injurious. Indian corn is generally very backward, with acreage larger than usual. A few farmers have commenced haying, and the crop is about the same as usual. Not many more early potatoes are raised than are needed for home use; they are very uneven. Market-garden crops are about the same in yield and price as in former years. Dairy products are in good demand, with the prices a shade higher than usual; cows are scarce. Pasturage is in good condition. Berries promise a full crop.

Chelmsford (W. B. BULLOCK). — Brown tail and gypsy moths are doing damage. Corn is small for the time of year; acreage about as usual. Haying has not begun, but the prospect for the crop is good. The acreage of potatoes is about as usual and they are looking well. Late frosts injured early market-garden crops on low land, and prices are high. Dairy products are higher with the quantity about as usual; cows are high. Pasturage is good owing to the late rains. Berries are looking well, and the warm weather is ripening strawberries very fast.

Tewksbury (G. E. CROSBY). — Cut worms, tent caterpillars and cabbage flies are doing damage. Indian corn is fairly good, with the acreage slightly increased. A little grass has been cut, and the prospect for the hay crop is good. Early potatoes not injured by frost are looking finely. Some early market-garden crops are off in yield and prices are no better, if as good, as those of former years. Milk is bringing the winter price, but this is not a dairy section. Pastures are in good condition. Strawberries are a fair crop, but the cold, wet weather has rather injured the quality. Apples will not be a large crop. Gypsy and brown-tail moths have got in their work in some cases in spite of spraying ; the woods are full of them.

Lincoln (C. S. WHEELER). — Gypsy moths, brown-tail moths and cut worms are doing damage. Indian corn looks fairly well, and there is a slight increase in acreage. Haying is not yet fairly under way; old fields are poor, but new seeded fields promise fairly well. The acreage of early potatoes is about average, and they are in good condition. Very little market-garden stuff has been marketed as yet. Milk is in good supply, and the price will be the same as in winter; good cows are scarce and high. Pasturage is in rather better than average condition. Strawberries and blackberries are good crops.

Lexington (HOWARD M. MUNROE). — Cut worms and brown-tail

moths are doing damage. Corn is backward; acreage of field corn increased, that of sweet corn about average. Haying has begun, but not generally; crop fully normal. The acreage of early potatoes is about as usual, and the prospect is for a light to medium crop. Early market-garden crops were below average in yield, with prices about as for the last few years. The quantity of dairy products is lower than usual, and prices are to be higher; dairy cows scarce and high. Pastures are in good condition. Early apples promise an average crop; baldwins below average; strawberries a light crop; blackberries a large crop. Prospects not bright except for hay and oats.

Winchester (S. S. SYMMES). — Canker worms and gypsy moths in the woodlands are doing damage. Indian corn is not raised here. Haying has begun and there will be a fine crop. Not many early potatoes have been planted. Prices for early market-garden crops are a little higher than last year. Cows are higher than ever. Pasturage is in good condition. Apples and pears promise good crops; peaches light. All crops were held back by cold, cloudy weather, but recent rains and hot weather have pushed everything ahead fast.

Newton (G. L. MARCY). — Insects are doing the usual amount of damage. Indian corn is in good condition at present, with an increased acreage. Very little haying has been done, but the prospect for the crop is good. Early potatoes are not much raised. Early market-garden crops are rather poor, having suffered from frost and cut worms. There is not much change in the price of dairy products; dairy cows higher. What few pastures there are here are in good condition. Wet weather caused strawberries to rot badly; other berries look well; fruits are coming along well.

ESSEX COUNTY.

Salisbury (WESLEY PETTENGILL). — Brown-tail and gypsy moth caterpillars, striped squash bugs and cut worms are doing damage. Owing to the cold weather corn was planted a little late, so it is not very large at present. Haying has not begun, but the prospect is for a good crop. Less early potatoes were planted than in previous years, but they are looking well. Milk is bringing a better price than in former years, and cows are scarce and high. Pasturage is in excellent condition. Apples are rather a light crop; pears fair; peaches very few; plums light; strawberries a big crop; bloom light on Baldwin apples.

Groveland (A. S. LONGFELLOW). — Gypsy and brown-tail moths are prevalent, and cut worms are unusually numerous. Corn is growing rapidly, and an increased acreage is noted. Haying has not begun, but a fine crop is promised. There is no change in the acreage of early potatoes, prospect rather poor, with some damage from frost. Early market-garden crops have been unsatisfactory because of cold weather,

but the promise is better for the future. There is no change from last year in dairy products and dairy cows, but both are much higher than five years ago. Pasturage is in very good condition because of heavy rains. Apples, pears and strawberries promise well, and there will be some peaches.

Andover (MILO H. GOULD).—Gypsy and brown-tail moths, tent caterpillars and cut worms are doing damage. Indian corn is looking fairly, with the acreage slightly increased. Haying has begun, with the prospect of a good crop. The acreage of early potatoes is about normal, and they promise well. Early market-garden crops are backward, but have brought good prices. Dairy products of all kinds are higher than for a number of years. Pasturage is in good condition. Strawberries are doing well; apples promise well where the trees have been sprayed. Good dairy cows are scarce and high. Many have gone out of the dairy business in this section on account of small profits, but it may start up again with the increased prices.

Rowley (D. H. O'BRIEN).—Canker worms, brown-tail moths, tent caterpillars, flea beetles, cut worms and gypsy moths are doing damage. Indian corn looks very poorly, with more than the average acreage. A few have begun haying, but there is only a light crop in prospect. The acreage of early potatoes is about average, but they suffered from light frost and look poorly. Quantity of dairy products below average, price above; supply scarce, price very high. Pasturage is in quite good condition. Apples are extra good; peaches scarce; strawberries medium. Late frosts did serious damage, and heavy rains have destroyed crops on low land.

Topsfield (B. P. PIKE).—Gypsy and brown-tail moths and cut worms are doing damage. Indian corn is looking very well, and the acreage is somewhat larger than usual. Haying has begun, with prospects of a fair crop. The acreage of early potatoes is about the same as usual, and they are looking well. No early market-garden crops are ready yet, but they promise well. Dairy products bring higher prices than last year; dairy cows high. Pasturage has been short but is improving. The outlook for berries is good; fruit very scarce.

Wenham (N. P. PERKINS).—Cut worms, black and striped squash bugs and brown-tail moths are doing damage. Not much Indian corn is grown here for grain, mostly sweet and silo corn. Haying has commenced with the prospect of a good crop on moist soils which are well fertilized. Not many market-garden crops are yet ready for harvest, but the rains have improved the prospect for all. Milk brings a little better price than last year; supply of good cows small and prices high. Pasturage has improved greatly since June 1, and is now better than a year ago. There is a good crop of strawberries; other berries not yet matured, but promise well.

NORFOLK COUNTY.

Cohasset (ELLERY C. BATES). — Cut worms are doing a little damage. Indian corn is not raised here. Haying has begun, with a good crop in prospect. The acreage of early potatoes is normal, and the promise good. Early market-garden crops have been good in yield and price, and the prospect is good for later ones. Cows and dairy products are above the normal in price. Pastures are in good condition. Strawberries are the only berry raised for market and are a good crop. There has been plenty of rain, and with the hot weather crops are looking finely.

Canton (EDWIN V. KINSLEY). — Cut worms and potato bugs are doing damage. Corn is looking O. K., with about the average acreage. Haying is well under way, with a full crop. Early potatoes show a full average acreage and promise well. Owing to late frosts, market-garden crops are late; prospect good for later ones; prices average. Quantity of dairy products normal, and prices same as last year; good dairy cows fully as high as the highest ever. Pastures are in very good condition. Apples, pears, cherries and strawberries all promise full crops. A very heavy frost on the morning of June 4 destroyed all early beans and tomato plants, and seriously damaged early corn and potatoes.

Norwood (F. A. FALES). — Cut worms and currant worms are doing damage. Corn is backward, and many fields had to be replanted on account of frost. Haying has just begun, and the crop will be light. The acreage of early potatoes is about 25 per cent less than that of 1909; vines now looking well. Market-garden crops are late; yield average, and prices about as last year. The quantity of milk is about the same, with the winter price paid; dairy cows are high. Pastures are in fine condition. Asparagus and strawberries were damaged by frost so that the yields of these crops are about half the normal.

Walpole (EDWARD L. SHEPARD). — Cut worms, potato bugs, elm leaf beetles and gypsy and brown-tail moths are doing damage. Indian corn is small, for want of warm weather, with about the same acreage as usual. Very little haying has been done, but the prospect is for a good crop. There is about the usual acreage of early potatoes; they suffered somewhat from frost but are now looking well. The yield of market-garden crops is below normal, with prices about the same as usual. Milk is the same as last year in price; butter somewhat higher; cows the same as for the last few years. Pastures are about in normal condition. Apples are looking well; strawberries are late; blueberries suffered from frost.

Foxborough (WILLIAM E. PERKINS). — The acreage of Indian corn is about the same as last year, but the crop is somewhat backward. Haying has begun, and the prospect is good for better than an average crop. The quantity of dairy products is smaller than usual, and the

prices higher; cows are scarce and high. Pastures are about in normal condition. The outlook is poor for fruits and berries; currants, blackberries and grapes were damaged by frost and strawberries by the cold, wet weather; bloom of pears, peaches and plums injured by frost.

Millis (E. F. RICHARDSON). — Potato bugs are doing some damage. Indian corn is very late and backward with about the usual acreage. Haying has not begun, but an excellent crop is promised. The acreage of early potatoes is larger than usual, but the crop is backward. Dairy products and dairy cows are about as usual in supply and price. Pasturage is in good condition. Berries and apples promise good yields.

BRISTOL COUNTY.

Mansfield (E. JASPER FISHER). — Elm leaf beetles, squash bugs and potato bugs are doing damage. Indian corn is not up to the average, and the acreage is 15 per cent greater than that of last year. Haying has begun, and the prospect is that the crop will hardly be an average one. Not many early potatoes are raised here. At the present time no early market-garden crops have been marketed. The quantity of dairy products is less than usual, and the price about the same as last year. Pasturage is in very good condition. Strawberries are the only berries grown, and the prospect is rather poor; apples, pears and plums also show a poor outlook.

Attleborough (ISAAC ALGER). — Corn is looking well, with the acreage much larger than usual. No haying has been done, but a large crop is promised. Not many early potatoes were planted, but they look well. The early market-garden crops are about as usual in yield and price. Prices for dairy products are a little stronger than usual. Pasturage is in good condition. Strawberries are light crop, owing to cloudy weather; too early to predict as to other fruits and berries.

Raynham (J. R. LAWRENCE). — Cut worms, flea beetles, rose bugs and striped cucumber beetles are doing damage. Corn is looking fairly well, but is late; acreage a third more than last year. Haying has not begun, and the prospects are good for a good crop. The acreage of early potatoes is about the same as usual; about two weeks late. Prices for early market-garden crops better than usual; rains have helped some crops and have delayed and injured others. Dairy products are in short supply and prices hold up well; cattle in only fair demand. Pastures are good at present writing. Strawberries have been of large size and have yielded well, sold readily at two boxes for 25 cents or better; few other fruits grown.

Dighton (HOWARD C. BRIGGS). — Cut worms and elm leaf beetles are doing damage. Indian corn is in normal condition, with the acreage slightly increased. But little haying has been done, and a good crop is promised. Early potatoes are average in yield and con-

dition. Early market-garden crops have made good yields and brought average prices; prospect good for later ones. The quantity of dairy products is smaller than usual and the price higher; cows are scarce and high. Pasturage is in very good condition. Strawberries are our chief fruit and made a fair yield, but were injured by excess of rain. Peaches and apples promise small crops; pears fair; plums small crop; grapes average.

Swansea (F. G. ARNOLD). — Elm leaf beetles and canker worms are doing considerable damage. Indian corn is looking well, and the acreage is greater than usual. Very little hay has been cut as yet, and the prospect is that there will be a fair crop. Acreage of early potatoes about as usual and vines are looking well; some complaint of poor germination. Cabbages look well, very few sold as yet; prices low for early market-garden crops. Milk is plenty at present; cows scarce and prices ten dollars per head higher than usual. Pastures are in good condition. The outlook for fruits and berries is very poor.

Acushnet (M. S. DOUGLAS). — Cut worms and small black flies are doing damage. Corn is of good color, but has not grown as fast as it should. Haying has not begun, but the crop will be above normal. The acreage of early potatoes is about normal, and they promise a good crop; early planted fields are in blossom. Asparagus was about half a crop; prices for early market-garden crops fully equal to former years. Milk brings good prices; dairy cows are higher than formerly and not in good supply. Pastures are in good condition. The strawberry crop is almost a failure, owing to wet weather and frost. Raspberries are looking finely and promise a good crop. Apples and pears are dropping badly.

PLYMOUTH COUNTY.

Norwell (HENRY A. TURNER). — Currant worms, squash bugs and potato bugs are doing damage. Corn is small; acreage about as last year. Very few have commenced haying; prospect for a good crop. There is about the usual acreage of early potatoes and they promise well. Early market-garden crops are about the same as last year in yield and price. Pastures are in very good condition. Strawberries were injured by frost; the prospect for small fruits is poor.

Brockton (DAVIS COPELAND). — Black and striped squash bugs potato bugs and rose bugs are doing damage. Indian corn is picking up since the warm weather began; acreage about as usual. Haying has not begun, and a good crop is in prospect. The acreage of early potatoes is slightly decreased and some fields are looking nicely. Yield of early market-garden crops good, prices low; wet weather injured some crops. Quantity and price of dairy products up to the average; cows are high in price and not plenty. Pasturage is in very good condition. Strawberries are our only fruit grown extensively; they suffered from frost and wet weather and the crop is light.

Hanover (HARRISON L. HOUSE). — Very few insects are causing

damage. Indian corn is in good condition with about the usual acreage. Haying has not begun, but there will be a good crop. There is about the usual acreage of early potatoes and they are in fair condition. Market-garden crops show the usual yields and prices are about the same; prospect good for later ones. There is no change in dairy conditions from previous years. Pastures are in good condition. All fruits and berries promise well.

Kingston (GEORGE L. CHURCHILL).—The cut worm is our most injurious insect this season. Indian corn is very late and small. Haying has not begun, but the prospect for the crop is very good. The crop of early potatoes compares well with previous years. Early market-garden crops are not yet harvested, but look very fair. The supply and price of dairy products and dairy cows are as good as usual. Pastures are in very good condition. Fruits and berries promise well, strawberries being the only thing yet marketable.

Lakeville (NATHANIEL G. STAPLES).—Potato bugs and rose bugs have appeared, but they are not as plenty as some years. Indian corn is looking well, with about the usual acreage. Haying has not commenced to any extent, but the prospect now is for a heavy crop. There is about the usual acreage of early potatoes and they look well. Early market-garden crops are about normal in yield and price. Milk brings a little better price than formerly, butter firm; cows rather scarce and prices high. Pasturage is in good condition. Early strawberries rotted badly.

Wareham (A. B. SAVARY).—Cut worms have done considerable damage. Corn is backward, but there is a slight increase in acreage. Haying has not begun, and there will be a normal crop. About the usual acreage of early potatoes has been put in and they look well. Dairy products are about as usual in quantity and price. Pasturage is in good condition except on old pastures which were injured by last season's drought. The outlook is not good for any early fruits or berries as they were injured by frost.

Mattapoisett (E. C. STETSON).—Cut worms are doing damage, and there are a few squash bugs. Corn is in fairly good condition, and the acreage is above the normal. Haying has not begun, but the crop will be quite good. The acreage of early potatoes is about normal, and they promise well. Prices and yields of early market-garden crops have been normal, and later ones promise well. Dairy products and dairy cows are normal in supply and price. Pastures are in good condition. Strawberries, gooseberries, currants and raspberries are all doing well.

BARNSTABLE COUNTY.

Bourne (DAVID D. NYE).—Cut worms are doing some damage. Indian corn is looking well, with an increased acreage. Haying will soon begin with a normal crop, or slightly better. There is the usual acreage of early potatoes and they promise well. Early market-

garden crops have made good yields and brought good prices. Dairy cows are well up to last year in price and good cows are scarce; dairy products in good supply and the milk nearly all goes to summer residents. Pasturage looks well, the recent rains having kept it in good condition. Strawberries are plenty and cheap; other fruits scarce.

Mashpee (W. F. HAMMOND).—Cut worms and potato bugs are doing damage. Indian corn is looking well and is above the average in acreage. Haying has not begun, and there will be an average crop. There is an increase in the acreage of early potatoes and the crop promises well. Market-garden crops are below average in condition. Dairy products are above the average in quantity and price. Pastures are in good condition. Apples, pears, peaches and quinces are very light, almost a failure; strawberries half a crop.

Barnstable (JOHN BURSLEY).—Tent caterpillars are very plenty. Corn is very backward, some having just been planted; acreage increased 15 per cent. Haying has begun, and the crop will be a little heavier than usual. There is an average acreage of early potatoes, and they are looking well. Early market-garden crops are very backward, but have brought good prices. There is a slight increase in the price of both dairy products and dairy cows. Pasturage is in fairly good condition. Strawberries are a small crop. It is too early to predict as to the cranberry crop.

Dennis (JOSHUA CROWELL).—Cut worms, tent caterpillars, brown-tail moths and cranberry insects are doing damage. Corn looks fairly well, and the acreage is increased 50 per cent. Haying is under way, and the prospect for the crop is good. There is about the usual acreage of early potatoes. Market-garden crops are about normal, with prices higher than usual. Dairy products are below the normal in quantity; dairy cows are scarce, and one-third higher in price than formerly. Pasturage is in good condition. The strawberry crop is below the normal; no other fruits or berries grown for the market except cranberries, which are looking fairly well, but were somewhat damaged by frost.

Brewster (THOS. D. SEARS).—Potato bugs, cranberry vine worms and squash bugs are doing damage. Indian corn is looking well; acreage about the same as last year. Haying has begun, and there is a prospect of a heavy crop. The acreage of early potatoes is smaller than in previous years, and the crop promises to be good. Dairy products are about the same as last year; price of cows higher than for a few years past. Pasturage is looking finely, owing to the wet season. There is a fine crop of strawberries, and the prospect for other berries is good.

Eastham (ALMOND L. NICKERSON).—Cut worms have been the worst of any recent season, but are about gone now. Indian corn is a trifle late on account of cold weather and constant rains; acreage larger than for many years. Haying has not begun; prospect for a

larger crop than usual, both fresh and salt hay. The acreage of early potatoes is about as usual, and they are looking well. Gardens are late, and we cannot tell what the results will be. The quantity and price of dairy products are practically the same as in former years; cows possibly a little higher. Apples will be very scarce; strawberry crop very good. Pastures are in very good condition, as we have had abundant rains.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE). — Potato bugs, cut worms and tent caterpillars are doing some damage. Indian corn is backward, with the acreage normal. Haying has not begun as grass is late; prospect fair. Early potatoes are normal in acreage and condition. Early market-garden crops are normal in yield and price. Dairy products and dairy cows are much higher than formerly. Pastures are in very good condition. The outlook for strawberries, cranberries and blackberries is good.

NANTUCKET COUNTY.

Nantucket (H. G. WORTH). — Cut worms and tent caterpillars are doing some damage. Corn is looking well, with a large increase in acreage. Haying has hardly begun, with good prospect. There is about the usual acreage of early potatoes. Early market-garden crops are looking well and bringing good prices, with the outlook good for later ones. The supply of dairy products is hardly equal to the demand, with prices good; dairy cows are high in price. Pasturage is in fine condition. Strawberries are looking well.

BULLETIN OF
MASSACHUSETTS BOARD OF AGRICULTURE.

GROWING AND MARKETING ASPARAGUS.

By Mr. FRANK WHEELER, *Concord, Mass.*

Since the asparagus rust has established itself in this country it is well known by the most experienced asparagus growers that the variety introduced from France, known as *Argenteuil*, or *Palmetto*, as it has been renamed since its introduction here, is much more resistant to rust than are other varieties, and is the more desirable kind to grow. One-year roots are much to be preferred to older ones, as they will not be so much mutilated in transplanting to the field from the seed plot, and will suffer less check; neither are they so likely to be stunted in the seed bed if dug as one-year roots as if allowed to grow three years; also, the one-year roots will get to the producing stage as soon as the older ones.

Procure seed that you know is true to name, preferably from some selected strain, known to be resistant to the rust, and of good market qualities. Sow the seed as early in the spring as the land can be made ready, on an early, moderately heavy, sandy loam, thoroughly enriched for two or more years with stable manure and chemicals, in drills 1 inch deep, 16 or 18 inches apart, thinly, or 1 to 2 inches in the row. This prevents crowding, and it is not necessary to thin the plants, which is desirable, as they are difficult plants to pull up so as to get all the root and prevent that plant coming up again. Keep this seed bed free from weeds by frequent wheel or scuffle hoeing and hand weeding. If troubled by the asparagus beetles or slugs protect the plants by dusting with Paris green, put on with a powder gun when the plants are wet with dew, or dusting slaked lime on the plants and slugs. The lime will stick to the slugs and kill them by contact. It is well to cover the plants in the seed bed through the winter with coarse, strawy manure or old hay, to protect the roots, as strawberries are covered or mulched for the winter.

The soil most favorable to the production of asparagus is a sandy loam, of a smooth texture, free from coarse grit, gravel or stones, 8 to 12 inches deep, underlaid with a smooth, yellow, loamy subsoil, chang-

ing to a close sand at a depth of 3 feet or more. It is better to prepare the field for the permanent bed one or two years before setting the roots, by growing some crop that requires high fertilization and thorough cultivation. The soil should, during this one or two years before setting, be well filled with manure to a depth of 9 inches or more, to stock the soil with humus, as all applications after the roots are set will have to be on or near the surface. A soil well stocked with humus will stand drought much better than one that is deficient in humus. The year previous to setting the roots the land should receive a heavy dressing of lime, nearly 1 ton to the acre, or an even heavier dressing of wood ashes, unless the land has received frequent applications of either or both of these materials in recent years, in which case a smaller quantity will be sufficient. Asparagus is very sensitive to an acid soil and will not do well on it.

The autumn previous to setting, plow the ground to a depth of 9 inches or more, if such a depth does not bring up too much of the poor subsoil. During the winter or spring spread 10 to 20 tons of manure broadcast, and in the spring, when preparing the ground, apply broadcast what chemicals are to be used. Thoroughly wheel harrow two or three times and smooth. Mark out the rows 4 feet apart and get them straight,—the field is to be planted for twelve years or more,—as much better work can be done in the care of the field with straight rows than with crooked ones. Open the furrows first with a swivel plow with two horses abreast, turning the furrows all one way. Then follow with a large two-horse landside plow, with the horses tandem in the furrow, throwing the earth the first time the same way as the swivel plow threw it, and then coming back in the same furrow, throwing the earth to the opposite side of the trench, where no earth has been thrown. In this way the trench can be made quite clean to a depth of 7 inches below the settled level surface without any shoveling by hand.

The roots are dug from the seed bed by plowing out with a large two-horse plow, shaken out with forks, and taken to some building where they can be separated and sorted, discarding all small and poor plants. The plants are set in the bottom of the trench 2 feet apart in the row, and covered with 2 inches of soil. The field is taken care of during the first season by hand hoeing in the line of the trench, working in soil a little at a time, so as not to have the trench filled full before the middle of August or first of September, and cultivating on the ridges between the rows with some cultivator that will not work the earth into the trenches too fast. If it is thought worth while to take care of the field by hand for a part crop, a row of beets, carrots, parsnips, bush beans or some similar crop can be planted on the top of the ridge any time after the asparagus is set.

The beetles and slugs must be taken care of by the same or similar means as those used on the seed bed, or if hens and chicken can be kept on the field they will be a help.

At some convenient time during the winter or spring following the setting in the field, and each succeeding year, spread from 10 to 20 spreader loads of manure per acre, and at the spring preparation of the land apply chemicals supplementary to the manure, in such quantities that the land will receive each year from 125 to 150 pounds of nitrogen, from 250 to 300 pounds of potash and from 100 to 125 pounds of phosphoric acid per acre. The chemicals used should be nitrate of soda and high-grade tankage for the nitrogen, and ashes and muriate of potash for the potash. Probably the tankage will carry enough phosphoric acid to make the required quantity, with that from the manure, but if not, use Thomas slag, bone meal or acid phosphate. If ashes are hard to procure use more muriate of potash to make up the deficiency of potash, and use one-third ton of lime per acre each year to keep the soil alkaline.

The second and each succeeding year the land is prepared by the use of wheel and smoothing harrows, no plow being used. The tops or brush of the plants are not removed, but are broken down and cut up by first using a cutaway harrow, driven with the driver riding. Next, a whole disk harrow is used crossways of the former course of the cutaway harrow, riding or not, as the texture of the soil lets the harrow into it. The harrows should not at any time be weighted so as to crowd them on to the crowns of the plants. Either before or after the second harrowing apply the chemicals, and harrow them in with the wheel harrow, not riding it the third time. Then smooth off with a smoothing harrow, but do not drag with a plank smoother or roll with a roller. If, however, it is desired, for any reason, to plank or roll the field, this should be followed, at as late a time as possible to do it without injuring the new shoots, by another application of the smoothing harrow, to kill all weeds that have started, and to leave the surface of the field rough, to prevent the soil from drifting in high winds and making the shoots crooked. The small pieces of brush and other material should be left on the field.

The field during the second year is taken care of with cultivators and horse hoes, with but little hand work.

Part of the preceding and what follows may seem like heresy to recommend, but my faith in it is attested by my practice and results for twenty-five years or more.

Stop cultivation the latter part of August or first part of September, and allow all weeds to grow for a cover crop and winter protection, which, when harrowed in with the asparagus brush and the light annual dressing of manure, will keep the soil well supplied with humus, which will not be the case if chemicals are used without stable manure and all top growth is gathered and burned.

If in the second year the shoots come of good size and very strong, they might as well be cut during the first week, as they are likely to be injured by frost, and it will hurt the roots no more to cut them than to let the frost kill them. The third year the shoots may be cut

and marketed, to about June 1, and then should be allowed to grow, and kept free from weeds until the latter part of August. Although I am recommending letting the weeds grow late in the season, when the asparagus is ripening, I most decidedly recommend that the weeds be kept down during the growing season, so that the asparagus may have all the benefits to be derived from clean culture and high manuring during that period. The fourth and succeeding years the crop may be gathered and sold to about June 20 or 25, according as to whether the season has been such as to make a large crop, and the market demands it.

During the cutting season the weeds are kept down by frequent cultivation between the rows, while those in the row are covered up, about June 1, by a tool, drawn by two horses, that straddles the row and draws the dirt into the row, making a ridge that covers the weeds so that they will not trouble for the rest of the cutting season. At the end of the cutting season all weeds are killed by leveling down the ridges by harrowing or cultivating and smooth harrowing, and for the rest of the season, until August 15 or September 1, by cultivators and horse hoes between the rows and hand hoeing in the rows.

MARKETING.

For the Boston or New England market, the "grass," as it is generally called, should be cut so as to have green grass, or so that the principal part of the growth is above ground, instead of the white kind, or that which is cut mostly below the surface. The customary length of bunch is $8\frac{1}{2}$ or 9 inches, so that two bunches laid end to end will reach across a bushel box, bunches of the size that one dozen will fill a layer in the box and three layers will fill the box, which is $1\frac{1}{4}$ pounds per bunch, or 55 pounds per bushel. The stalks are cut in the field so that they will show about 6 inches of green growth and $2\frac{1}{2}$ inches of white after they are packed, tied and butted. The best tool for cutting is a knife with handle 7 inches long and blade 8 inches long by $1\frac{1}{4}$ inches wide, with dull sides, sharpened across the end, which should be square. There are knives on the market of this description, except that there is a deep swallow tail on the end, instead of being square. The objection to this form is the greater liability of injury to buds in using, the stalk not being entirely severed until the deepest part of the notch has gone through the stalk, and when that part is through the long points of the knife have gone their length beyond, which may be among the crowns of the roots, to the injury of some of them.

Each man cuts two rows at a time, and two men lay together between them the handfuls of grass they cut. After cutting, it is gathered in bushel boxes, tips overlapping in the middle of the box, taking care to lay the grass straight and even. It is then taken to the packing room, where it is sorted as it is packed for market. If the grass is such as it should be, with the care laid down in the foregoing pages, it

will pay to make two grades. The better grade should be composed of only large, straight, full lengths of stalks, while in the poorer grade may be put the small, short and crooked ones, if not so crooked as to disfigure the bunches after being packed. At the packing room the grass is put on a table or bench, around which the packers sit and the tier and butter-off stand. A table 7 feet long by 5 feet wide will accommodate five or six packers, one tier and one butter-off and washer. The packers use a rack, made with a 2 by 4 by 12 inch base, with a $\frac{1}{2}$ inch headboard, 6 inches high and 4 inches wide. Two inches from the headboard is a U-shaped iron, $\frac{5}{16}$ inch in diameter, $2\frac{3}{8}$ inches high, the lower four-fifths of which describes a semicircle of $2\frac{1}{4}$ inches diameter. Six inches from the headboard is another similar iron, $2\frac{7}{8}$ inches high, the lower part of which describes a semicircle of $2\frac{3}{4}$ inches diameter. Between these two irons, and closer to the larger one than to the smaller, a channel is cut across the base, to put the tying material through when tying. Standing about 6 inches above the large table, in or near the center, is a small revolving table, about 2 feet square, from which the packers take the empty racks and to which they return them when filled, where they are convenient for the tier to reach to place in the tying machine. One man can tie what three to six can pack, according to the size of the grass, and how well it is packed. He needs to be a nimble man, of quick good judgment, in order to see that all the bunches are of the same size before putting the pressure on for tying. Under the old order of packing, where each packer tied his own packing by hand, there was too much variation in the size of bunch if there were many packers in the gang.

The tying machine is better understood by seeing it than from description. It consists of a double hook carried by a hinged and weighted arm fastened to the under side of the table, to which a treadle is hung, on which the tier stands to give pressure to the bunch when tying it. With this machine a man can tie much faster and tighter than by hand. The tying machine is placed midway on one side of the table, while at its left, fastened to one corner of the table, is the cutting machine, gauged to cut off all the butts the same length. The man cutting off butts also does the washing. He has a tub of water close by, into which the bunches are dropped as cut. They are then washed and placed upright in long troughs or sinks, and water put to the grass a few hours before packing in bushel boxes to send to market. Never let the grass get wet above the butts after it is once dry after washing, but keep it as cool and dry as possible, to prevent its commencing to spoil.

During bright and hot weather, when cutting, the grass will wilt somewhat in the field, but that is no objection, as it will pack better and tie tighter, and it freshens and swells to its normal size after being in the sinks of water a few hours. Care will have to be taken not to make the bunches quite as large as when the grass does not wilt, to allow for the swelling.

If for any reason the grass is to be held for a few days, and it cannot be put into cold storage, it is better not to bunch it as it comes from the field, but to carry it to a cold cellar and lay it on the floor. It can be kept in this way for a few days without much trouble.

The customary box in which it is sent to market is the common Boston bushel box, holding three layers of one dozen bunches each, and covered by four pieces of lath nailed across the top. In very hot or muggy weather it is well not to place any paper, or other close covering, over the grass, but to let it have all the air it can get. Within twenty miles of Boston it is boxed the afternoon of the day it is packed, and carried that afternoon or night, by wagon, to market, so that it is ready for sale early the next morning. If much farther than twenty miles from market it is not boxed until the next morning after packing, and is then sent by as early an express as possible.

While the market calls for the large grades of grass as strongly as it now does, — and it probably will continue to do so, — it will be to the grower's advantage to try to supply it. To have fields producing this quality of grass new beds need to be set out frequently, to take the place of the old ones as they fail. Twelve or sixteen years of cutting is as long as they will be in the most profitable stage. To destroy an old bed it is as well not to plow out the old roots, but to plow shallow, or wheel harrow above the rows, keeping down all growth from the roots for two or three years, and letting them rot in the ground. After four or five years the field can be plowed to any depth wished, and it is not robbed of a lot of fertility by carrying off all the roots. While killing out the roots any hoed crop can be grown, and almost any crop will do well on an old asparagus field.

There does not seem to be any efficient and economical way of preventing asparagus rust. The best thing to do is to get the most resistant variety, and after you have established a bed, to select from the most resistant and best market types of stalks, seed for setting new fields, or obtain seed from some one you know to be doing this.

During the last fifteen years the demand for asparagus has grown faster than the supply, and the prospect of good profit from the growing of it in the future is good, especially for the large grade. All the extra profit in growing the large grade does not come from the extra price received, but partly from the more economical handling of the crop. It takes the same time to cut and pack the same number of little stalks as it does of large ones, but, after they are packed and tied, there is not more than one-third or one-half as many bunches. Therefore get good stock, give it plenty of room, feed it high, give it the best of care, put up the product honestly, get a reputation for good grass, and the reward will be satisfactory.

MASSACHUSETTS

CROP REPORT

FOR THE

MONTH OF JULY, 1910.

ALFALFA IN MASSACHUSETTS.

*ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.*

J. LEWIS ELLSWORTH, *Secretary.*

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CROP REPORT FOR THE MONTH OF JULY, 1910.

OFFICE OF STATE BOARD OF AGRICULTURE,
BOSTON, MASS., Aug. 1, 1910.

In this third crop report for the current year, for the month of July, will be found an article on "Alfalfa in Massachusetts," by Prof. Wm. P. Brooks, Director of the Massachusetts Agricultural Experiment Station. There seems to be a general interest in this crop, as shown by the number of inquiries we have received during the past few years in regard to it. It is for the purpose of guiding those who are thinking of trying to introduce alfalfa on their farms aright, showing them the conditions of soil, fertilization, clean culture, and so on, which are absolutely essential to success, that this article is written. Professor Brooks has had considerable experience with alfalfa in the experiments conducted by the Massachusetts station, and speaks, therefore, with authority. That this valuable crop may succeed in some sections and under some conditions in Massachusetts there is no question. What these conditions are is well explained in this article, and for that reason it must be particularly valuable to those who are thinking of undertaking to establish alfalfa on their farms.

PROGRESS OF THE SEASON.

The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture (Crop Reporter for July, 1910) gives the preliminary estimate of corn planted as 114,083,000 acres, an increase of 5,132,000 acres (4.9 per cent) as compared with the final estimate of last year's acreage. The average condition of the crop on July 1 was 85.4, as compared with 89.3 on July 1, 1909, 82.8 on July 1, 1908, and 85.1, the ten-year average on July 1.

The average condition of winter wheat on July 1, or when harvested, was 81.5, as compared with 80 last month, 82.4 at harvest in 1909, 80.6 in 1908, and 81.3, the average at

time of harvest for the past ten years. The average condition of spring wheat on July 1 was 61.6, as compared with 92.8 a month earlier, 92.7 on July 1, 1909, 89.4 on July 1, 1908, and 87.1, the ten-year average. The average condition on July 1 of spring and winter wheat combined was 73.5, against 85.2 a month earlier, 86.5 on July 1, 1909, 83.9 on July 1, 1908, and 84, the ten-year average.

The average condition of the oat crop on July 1 was 82.2, as compared with 91 a month earlier, 88.3 on July 1, 1909, 85.7 on July 1, 1908, and 86.6, the ten-year average.

The acreage of white potatoes is estimated at 3,521,000 acres, or 4,000 acres (.1 per cent) less than last year. The condition of the crop on July 1 was 86.3, as compared with 93 on July 1, 1909, 89.6 on July 1, 1908, and 90.9, the ten-year average on July 1.

The acreage of tobacco is estimated at 1,216,000 acres, or 35,700 acres (3 per cent) more than last year. The condition of the crop on July 1 was 85.3, as compared with 89.8 on July 1, 1909, 86.6 on July 1, 1908, and 86.3, the ten-year average on July 1.

In Massachusetts the acreage of corn is 50,000 acres, or 106, as compared with last year, and the condition July 1 was 90; the average condition of oats was 99; the acreage of tobacco was 4,400 acres, or 100, as compared with last year, and the average condition was 95; the acreage of Irish potatoes was 34,000 acres, or 99, as compared with last year, and the average condition was 93; the average condition of rye was 96; of timothy, 97; of clover for hay, 97; of all hay, 97; of pasture, 96; of apples, 77; of peaches, 65; of pears, 83; of grapes, 82; of strawberries, 90; of tomatoes, 90; of cabbages, 91; of onions, 90; of Lima beans, 86; of other beans, 90; of blackberries, 91; of raspberries, 93; and of cantaloupes, 82.

TEMPERATURE AND RAINFALL FOR THE WHOLE COUNTRY.

[FROM UNITED STATES NATIONAL WEEKLY WEATHER BULLETIN.]

Week ending July 4. — High temperatures over the upper Missouri valley and adjoining districts in Canada marked the first of the week, and slowly overspread the Plains States,

the upper Mississippi valley, Lake region, Ohio valley and portions of the Atlantic coast districts during the following three or four days. Over the southern portion of the country the temperatures of the week were moderate, and also in districts west of the Rocky Mountains. No well-defined storm area crossed the United States during the week, but considerable rainfall occurred as the result of local depressions, especially in the Gulf States. At the opening of the week showery weather prevailed generally throughout the middle and lower Mississippi and Ohio valleys, continuing during Tuesday and extending into the Middle Atlantic States and New England.

Week ending July 11.—At the opening of the week moderate temperatures were prevailing in practically all districts. Over the Pacific coast States unusually high temperature prevailed on Wednesday, and thereafter there was a general increase in nearly all sections, the warm wave becoming more intense over the eastern portion of the country as the week advanced, the temperature being generally the highest for the season over much of the Atlantic and Gulf coast States during Saturday and Sunday. Showers continued locally, as during the preceding week, over the Gulf and South Atlantic States. An extensive area of low atmospheric pressure moved, during the early part of the week, along the northern border from eastern Montana to the St. Lawrence valley, but only light local showers occurred. There was but little rain in the Lake region, the Middle Atlantic States and New England.

Week ending July 18.—At the beginning of the week the temperatures were generally high over the South Atlantic and Gulf coast States and in the Plateau and Pacific coast districts, but moderate elsewhere. For a day or two moderate temperatures continued from the Mississippi valley eastward, but to the westward there was a general rise, which developed into a warm wave of marked intensity. At the end of the week conditions were unsettled, and it was generally cooler over the districts east of the Mississippi. A general rain that developed over the middle Plains region on Monday moved rapidly eastward to the Lake region and the lower

St. Lawrence valley, accompanied by local showers. A second moderate depression developed Thursday and Friday over the middle Plains region, and, moving slowly eastward, gave unsettled, rainy weather over the middle and southern portions of the country eastward to the Atlantic coast.

Week ending July 25. — The week opened with moderate temperatures and light northerly winds over all districts from the Mississippi valley eastward to the Atlantic coast. The winds changed gradually to warm southerly, with the drift of the high-pressure area southward, and at the end of the week southerly winds and high temperatures were general over all northern and central districts from the Mississippi valley eastward. Temperatures were generally high throughout the week in districts west of the Mississippi valley. A storm area of considerable extent moved from the Missouri valley eastward over the Lake region to the St. Lawrence valley, accompanied by local showers along the northern border, with occasional heavy rains in portions of the Lake region. Elsewhere the only rains were local thunderstorms at widely scattered points and dates.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending July 4. — New England. Boston: Very little rain fell during the week; sunshine was abundant and the temperature was seasonable. The conditions were very beneficial, but the top of the ground is becoming dry, and moderate rain is needed.

Week ending July 11. — New England. Boston: Moderate local showers fell in the northern portion the last of the week, but otherwise the weather was generally fair. Summer temperatures prevailed, and the top of the ground continues dry in the central-southern portion.

Week ending July 18. — Except for occasional local showers, which were generally sufficient to moisten the top of the ground, the weather was fair. The temperature averaged above normal, except the last two days.

Week ending July 25. — New England. Boston: Moderate temperature prevailed at first, and very warm weather

the last of the week. Light showers were general in the northern portion during the last of the week, but very little rain fell in central and southern portions, where it is becoming very dry and rain is generally needed.

WEATHER OF JULY, 1910.

The month as a whole was unusually warm, with a marked deficiency in the rainfall. With the exception of a cool spell from the 17th to the 20th, inclusive, the daily mean temperatures were above the July normal, with the excesses ranging from 2° to 12° . Notwithstanding the unusually warm weather through the month there were no extremely high temperature records, no record-breaking days, but almost daily maximum temperatures, ranging from 86° to 90° , and ten days with maximum temperatures ranging in the 90s. The nights were also warm, with the minimum temperatures falling little, if any, below 70° . The monthly mean temperatures in nearly all sections were from 3° to 5° above the normal for July. The rainfall of the month was, with slight exceptions, only from 25 to 40 per cent of the normal, making the month one of the driest of record. It resulted from local disturbances, and the precipitation was, therefore, unevenly distributed. There were fewer local storms and thunderstorms than usual, though in some instances the storms were of marked violence. The droughty weather of the month was unfavorable to the crop interests, although not seriously felt till toward the close, as the soil was well supplied with moisture from copious rains of the preceding month.

IMPORTANT ANNOUNCEMENT OF ORCHARDING PRIZES.

The Legislature of 1910 appropriated \$500 annually to be expended by the State Board of Agriculture in the encouragement of orcharding, by prizes or otherwise. Pursuant to the purposes of the act the Board offers the following prizes:—

1. For the best yield of marketable fruit from any single apple tree in Massachusetts. To be shown by sworn statement as to the yield and price realized, and accompanied by full data as to variety, treatment the tree received in pruning, spraying, tillage and fertilizing, with cost of same. Three prizes,—\$25, \$15, \$10.

2. For the best yield of marketable fruit from an acre of apple orchard in Massachusetts. Trees to be in one solid block. To be shown by a sworn statement as to the yield and price realized, and by full data as to varieties, treatment the trees have received as to pruning, spraying, tillage and fertilizing, with cost of same. Three prizes,—\$50, \$30, \$20.

3. For the best results secured from spraying an apple orchard. To be shown by sworn statement as to treatment, cost and results. Two prizes,—\$30, \$20.

4. For the best young apple orchard, of not less than two acres, not necessarily in one block, set in 1908 or 1909. The following points to be considered by the judges in making their awards: (1) manner of laying out; (2) condition of the soil; (3) varieties; (4) growth of trees; (5) health of trees; (6) shaping of trees. Three prizes,—\$50, \$30, \$20.

Entries for these prizes must be made with J. Lewis Ellsworth, secretary, State Board of Agriculture, Room 136, State House, Boston, Mass., not later than Oct. 1, 1910.

The balance of the appropriation will be expended in spraying demonstrations, in preparing and exhibiting an advertising display of apples grown in Massachusetts, in Boston and other cities, and for travelling and necessary expenses of judges.

In the circular to correspondents, returnable July 23, the following questions were asked:—

1. What insects are proving most troublesome in your locality?

2. What is the condition of Indian corn, and what proportion of the crop is grown for ensilage?

3. What is the quantity and quality of the hay crop as compared with former years?

4. What forage crops are being raised, and what is their condition?

5. What is the condition of market-garden crops, including potatoes, and how have those already harvested compared in yield and price with former years?

6. What is the prospect for apples, pears, peaches, plums, quinees, grapes and cranberries?

7. What is the condition of pasturage?

8. How have rye, oats and barley compared with former years, both as grain and forage crops?

9. Have any new apple orchards been set in your town during 1909 and 1910, and if so, what is your estimate as to the number of acres?

Returns were received from 134 correspondents, and from them the following summary has been prepared:—

INSECTS.

The potato bug is the insect most commonly reported as doing damage, though not especially prevalent or injurious on the whole. A considerable number of correspondents report that there is no appreciable damage from insects. The imported pests seem to be more widely prevalent than formerly, 21 correspondents reporting damage by the elm-leaf beetle, 19 by the gypsy moth and 12 by the brown-tail moth. Other insects mentioned are currant worms, cabbage worms, tent caterpillars, onion thrips, cattle flies, cucumber beetles, squash bugs, the pear tree psylla, onion maggots, onion lice, asparagus beetles and cranberry vine worms.

INDIAN CORN.

Corn came forward very rapidly with the hot weather of the month, and at the time of making returns was close to the normal in development. There were some reports that it was suffering from drought, especially on light lands, but in general it had not begun to feel the effects of the long-continued dry weather as had other crops. With seasonable rains and a reasonably open season so far as frosts are concerned a good crop should be secured. In dairy sections the greater part of the crop is used for ensilage, but the number of silos does not appear to increase very rapidly. The greater part of the increased acreage noted for this season appears to have been intended for grain.

THE HAY CROP.

The hay crop was generally one of the best of recent years in quantity and quality, far exceeding expectations as indicated by the reports for June. Correspondents are almost unanimous in reporting the crop to be at least average, while many consider it to have been above normal, or, as they commonly express it, the best for years. The quality of the crop was generally reported as high, and it was secured in the best of condition, the hot, dry weather of the month being especially favorable to haying operations. Rowen had not started at all at time of making returns, except on particularly moist and fertile fields, and unless rain comes soon in considerable quantities the prospect for the second crop is very poor.

FORAGE CROPS.

The usual acreage of forage crops was put in, as a rule, though a few correspondents report that the ground has been too dry for seeding them. Corn and millet are the crops most frequently mentioned. Millet has steadily grown in favor for the past half dozen years, until it appears to stand on an equality with corn as a forage crop. Oats, barley, Hungarian grass and oats and peas are also extensively grown, coming in the order named in popularity. Other crops occasionally grown for forage are rye, wheat, vetch, clover and turnips. Forage crops were generally in good condition at time of making returns, though feeling the drought in some cases and likely to suffer severely from any long continuance of droughty conditions.

MARKET-GARDEN CROPS.

Market-garden crops were uneven, some having suffered severely from the dry weather and others apparently coming through uninjured. Prices have ruled perhaps a trifle lower than for the last few years. Very few potatoes had been dug and the outcome of the early crop was uncertain; it was generally expected to be considerably shortened by drought.

as was also the late crop. Later market-garden crops are feeling the drought, but should recover and do well with reasonable rains.

FRUITS.

Apples have dropped badly and the prospect for the crop is poor at present. The same was true last year in midsummer, but our farmers realized more profit as a whole from the apple crop than for many years past. Conditions may improve for this year's crop so that the history of last year will be repeated, but at the present time the indications point to a light crop. Pears and plums are also reported as generally light. Peaches are rather better than usual for the State as a whole, though less attention is paid to this fruit as a commercial proposition than was formerly the case, owing, probably, to loss of crops and trees by severe winters. Quinces so far as reported promise well. Grapes will give an average crop, from present indications, but are mostly grown for home use only. It is a little early to draw definite conclusions in regard to the cranberry crop, but present indications are for no better than an average yield. Wild berries generally promise well.

PASTURAGE.

Pastures were in splendid condition until the beginning of the month, feed being green and abundant. They still remain in good condition in many cases, but are beginning to suffer from the drought as a whole, and in some instances upland pastures are reported as "dry," "drying up" or "brown." Rain is imperatively needed or our farmers will soon be obliged to begin feeding at the barn to eke out the pasturage.

SMALL GRAINS.

Rye and oats were a good crop in most sections, though there are a few complaints of oats rusting. Barley is little grown except for forage. As an early forage crop rye did well. Oats also seem to have been very satisfactory for this purpose. Barley was doing well up to time of making returns, but of course needs rain for its future development.

ORCHARD PLANTING.

The returns in regard to setting out new orchards indicate that our farmers are turning their attention to this line of work, but that they have not as yet gone into it extensively as a commercial proposition. Seventy correspondents report that there have been no commercial orchards planted during 1909 and 1910; 24 that a few trees have been set out but no orchards; 2 that many trees are set out but no orchards; 3 that sufficient trees are set every year to replace old ones that have died; while 32 report some orchard planting, ranging from one small orchard to an aggregate of 30 acres for the town. There are numerous reports of better care, pruning, spraying, etc., for old orchards and old trees. In many sections farmers are this year spraying for the first time, and the effect of this general better care and spraying must be apparent in the improved quality of the Massachusetts fruit which will be offered for sale in the autumn.

NOTES OF CORRESPONDENTS.

(Returned to us July 23.)

BERKSHIRE COUNTY.

New Marlborough (E. W. RHOADES). — Cabbage worms are making much trouble. Corn is growing well, but only a few of our larger farms have silos. A large crop of hay of excellent quality is nearly housed. Forage crops are sowed corn, millet and turnips, all of which need rain. Early potatoes have not given a large yield, but gardens promise well. Apples and peaches seem to be very uneven, but there will be some good crops; pears are plenty and of good size. Pastures are in fine condition. Rye and oats are more than normal crops. Very few apple orchards are being planted, not enough to keep the number good.

Alford (LESTER T. OSBORNE). — Indian corn is now growing rapidly. about half the crop is grown for ensilage. The largest crop of hay for years and also of the best quality has been put in in excellent condition. Corn is our principal forage crop; there are some oats and peas; all are in fine condition. Garden crops are suffering from dry weather and potatoes indicate a very light crop. Apples are half a crop; pears and grapes average. Pasturage is in fair condition, but is growing less. Rye, oats and barley are the best for years. In this section comparatively few apple trees have been set.

West Stockbridge (J. S. MOORE). — Currant worms and potato bugs are doing damage; cabbage worms very few. Some fields of corn look well, but many are from two to three weeks late; only two silos in town. The hay crop is larger than usual and of better quality where cut early; late cut hay was weedy. No forage crops to speak of are grown. Early gardens have done nicely, but are suffering from drought. Apples are a failure, not over one-third crop; pears not as plenty as last year; no other fruits raised. Pasturage has been very good up to the present time. Rye, oats and barley are looking well, with the usual acreage. No one has set what might be termed an orchard, though a few have set out a few apple and pear trees.

Lenox (HORATIO H. SEARS). — The potato bug is somewhat more troublesome than usual. Corn is in good condition, considering the late spring, and one-fourth the crop goes into the silo. The quantity

of the hay crop is very large and the quality fair to good. Oats are grown to a small extent for forage and are in fair condition. Late potatoes will be fully up to the average; early sorts not yet harvested. Apples and pears are an average crop; peaches and plums small; other fruits not grown. Pastures are poor at present. As forage oats are a good crop, and a fair to good grain crop is expected. Apple trees have not been set to any extent.

Windsor (HARRY A. FORD). — Potato bugs are doing some damage. Indian corn is small, owing to dry weather; nine-tenths of the crop is grown for the silo. Hay is about an average crop in quantity and quality. Oats and corn are our principal forage crops. There will be less than a full crop of apples. No new apple orchards have been set out in this town in the past two years.

Lanesborough (W. E. FOSTER). — Potato bugs are doing some damage. Corn is in good condition; about one-third of the crop is used for ensilage. The hay crop is fully up to the normal in quantity and quality. Millet and corn are our principal forage crops and both are rather backward. Market-garden crops are backward; potatoes yield about three-fourths of the normal, with the usual price. Apples are a failure, and other fruits short crops. Pastures are very dry. Rye, oats and barley are fully up to the normal. No new apple orchards have been set out recently in this town.

Cheshire (L. J. NORTHUP). — Potato bugs seem to be more plenty than usual. Indian corn has come forward rapidly and is about normal; about one-third of the crop is grown for the silo. Quantity of the hay crop much more than usual and quality extra. Millet, oats and fodder corn are our principal forage crops and are in good condition. The condition of market gardens promises well; early potatoes have not been harvested. It is rather early to report on fruits as yet. Feed is getting short in pastures. Oats are a fair crop, but are mostly cut green. More or less apple trees are being set every year, but no orchards.

Savoy (WILLIS W. BURNETT). — Potato bugs are a great nuisance. The corn crop is very backward, with less acreage than usual, and is mostly grown for ensilage. The hay crop is above the average in both quantity and quality. Corn and oats are our principal forage crops and are in fair condition, though somewhat backward. All garden crops are late; no potatoes harvested as yet. Apples are dropping; other fruits not very abundant. Pasturage has been fine, but is now getting a little dry. Rye, oats and barley are full crops, but a little backward. Very little has been done in setting out new apple orchards.

Williamstown (S. A. HICKOX). — Potato bugs are doing some damage. Indian corn is rather below the normal in condition. The hay crop is 100 per cent in both quantity and quality. Sweet corn is the principal forage crop grown here. Market-garden crops are backward.

Potatoes are showing blight and few have begun digging as yet. Pasturage is falling off in condition. Apples promise half a crop; peaches none; pears and plums 30 per cent; grapes half a crop. No new apple orchards have been set out recently.

FRANKLIN COUNTY.

Leyden (FRANK R. FOSTER). — Potato bugs are doing some damage. Indian corn is in good condition; probably two-thirds of the crop goes into the silo. The hay crop is much above the average in every way. Barley and millet are our principal forage crops and are in good condition. No market-garden crops have been harvested as yet; potatoes are suffering from bugs, but are otherwise in good condition. There will be half a crop of apples; other fruits normal. Pasturage is in good condition. Apple trees are set out, but only in a small way, probably not over 50 trees to any one person. More attention is paid to trimming and caring for apple trees. More strawberries are raised for the market than formerly.

Buckland (EUGENE D. GRISWOLD). — Potato bugs are the only insect doing damage at present. Corn is rather late and uneven; probably about half the crop is grown for ensilage. The hay crop is a record breaker and is of very good quality. Forage crops are little raised, but are looking well. Potatoes are rather late and none have been harvested. The prospect is good for fruit; apples will be rather a smaller crop than usual. Pasturage is in good condition. Rye, oats and barley are about average crops, but are little raised. From 15 to 20 acres of apple trees have been set in the past year.

Ashfield (ALBERT HOWES). — Potato bugs are doing damage. Corn is about an average crop, but uneven; probably 75 per cent of the crop goes into the silo. The hay crop is the largest crop cut for years and is of good quality. Oats and millet are our principal forage crops. Potatoes look finely, but need rain badly. Apples and other fruits do not promise nearly as well as earlier in the season. Pasturage looks well now, but needs rain. Rye, oats and barley are average crops; but little grown for grain. A good many apple trees have been set out, but no extensive orchards.

Conway (L. T. HOPKINS). — Potato bugs are doing some damage. Indian corn is very backward and the earlier fields tasselling out at from one-half to two-thirds the usual height; one-fourth of the crop is put in for ensilage. Hay is an average crop in quality and quantity, but more of the crop was cut late than usual. Corn and millet are our principal forage crops and there is some complaint of millet not germinating. Farmers' gardens are backward and it has been too dry for early potatoes. Early apples promise a full crop; winter ones half a crop; pear trees well loaded. Pastures are showing the effect of dry weather. Oats for forage have done well.

Deerfield DWIGHT A. HAWKES.—Corn is a very good crop and about 10 per cent of it will go into the silo. The hay crop is above the normal in quantity and quality. The prospect is poor for all kinds of fruit. Pasturage is getting short. No new apple orchards have been set out in the past two years. All crops are suffering from drought. We have had an excellent time to secure the hay crop.

Sunderland GEO. P. SMITH.—Indian corn is in very good condition and about half the crop is grown for ensilage. The hay crop is above the average in both quantity and quality. Forage crops are not much grown. Market-garden crops are in fair condition, with yield rather light and prices good. There will be small yields of all fruits. Pasturage is in fair condition. Rye, oats and barley are little grown. No apple orchards have been set out that I know of. Onions and tobacco give good promise. No rain fell from June 18th to July 22d. when a moderate shower did a great deal of good.

Montague (A. M. LYMAN).—Potato and squash bugs are doing damage, the latter nearly ruining the squash crop. Indian corn is very uneven: one-half the crop is put into the silo, the other half being husked and the stover shredded. The hay crop is larger than usual and of excellent quality. Japanese millet and corn are our principal forage crops and both are suffering from lack of rain. Early market-garden crops were fair: late market-garden crops and potatoes are drying up. Apples, pears and grapes promise fair crops, but not up to the promise of the bloom. Pastures are getting short. Rye is a good crop; oats fair; not much barley. No extensive orchard planting has been done, just the replacing of old trees.

Wendell (N. D. PLUMB).—Potato bugs and tent caterpillars are doing damage. Corn is somewhat backward: about one-eighth of the crop goes into the silo. The hay crop was about normal in quantity and of the best quality. Oats, barley and fodder corn are our principal forage crops and all are very backward. The potato crops are nearly a failure. Pears, apples and peaches are dropping badly, and will be less than normal crops. Pasturage is in poor condition. Rye, oats and barley are fair average crops. No new apple orchards have been set out in this town.

New Salem DANIEL BALLARD.—Potato bugs are quite plenty. Corn is coming forward finely: only a small portion of the crop is grown for ensilage. Quantity of the hay crop normal, some fields heavy: quality superior. Corn, Hungarian grass, oats and pease and Japanese millet are the forage crops grown and are in good condition. Market-garden crops are not much raised here. Apples appear plentiful, but are dropping badly. Feed in pastures has been good, but is now drying up. The yield of rye, oats and barley has been excellent, especially for rye. The increase in the acreage devoted to apple orchards has been small.

HAMPSHIRE COUNTY.

Greenwich (W. H. GLAZIER). — Potato bugs are doing some damage. Indian corn is looking fairly well: little of the crop is grown for the silo. The hay crop was rather heavier than usual and of fine quality. A little millet is raised for forage. Potatoes are the only market-garden-crop grown to any amount. But few apples are grown here. Pastures are burning up. Rye and oats have been excellent crops. I know of no new apple orchards being set. There is great need of rain.

Belchertown (H. C. WEST). — Corn is growing fast and looking finely; less than one-half the crop will go into the silo. There was a light crop of hay of good quality. Corn, barley and oats are our principal forage crops and all are looking well. Market-garden crops have yielded fairly well and brought good prices. The prospect for fruit is fairly good. Pasturage is rather short. Rye, oats and barley are full average crops. But one orchard of any size has been set in this town, a few trees here and there being the extent of the other planting.

Amherst (Wm. P. BROOKS). — Onion thrips and the elm-leaf beetle are doing some damage. Corn is in excellent condition, except on the lightest soils, where it suffers from drought; half the crop will go into the silo. The yield of hay was much above the average and the quality particularly fine, the crop being secured in the best of weather. Japanese millet, corn and Hungarian grass are grown as forage crops: condition good, except on light soils where rain is needed. But few market-garden crops are grown: yield good, but prices low. Potatoes have made good growth. Apples are uneven, but many trees show good yields: pears good: peaches good: also plums and quinces: grapes exceptionally good. Feed in pastures is good, but now needs rain. Rye, oats and barley have given full average crops. I do not know of any new orchards of considerable size being set.

Hadley (L. W. WEST). — Potato bugs are doing some damage. Indian corn is in average condition; and the proportion of the crop grown for the silo is increased one-fifth over former years. The hay crop was 10 per cent above the normal in quantity. Oats and millet are our principal forage crop. Market-garden crops are in fair condition, but need rain: potatoes look well. Apples and plums are less than average crops: peaches, quinces and cranberries not grown: grapes good. Feed in pastures is short and dry. Rye was above an average crop: oats good. No new apple orchards have been set out here. All crops need rain.

Hadley (W. F. PERSON). — Elm-leaf beetles are doing damage. Corn looks well considering the late spring: about two-thirds of the crop will be used for ensilage. The hay crop is the best for a number of years and of good quality. Millet is the principal forage crop and

looks well. Garden crops are not up to the average; no potatoes dug as yet; prices about average. No apples; few pears; grapes promise well. Pastures are looking well. Rye and oats are extra good crops. No new apple orchards have been set.

Easthampton (W.M. C. CLAPP). — Squash bugs are doing some damage. Corn promises about a normal crop, but has begun to roll on light land; about one-third of the crop is grown for the silo. The hay crop was good on new seeded fields. All forage crops need rain; millet and fodder corn are the principal ones grown. Potatoes need rain and early potatoes will be a light crop. Some apple trees hang full of fruit, while others in the same orchard have none. Upland pastures are brown. Rye and oats are average crops. No new apple orchards have been set out in this town.

Westhampton (LEVI BURT). — Potato bugs are doing some damage. Indian corn is very backward and two-thirds of the crop will go into the silo. The hay crop was of excellent quality and a full yield. Oats and peas, and millet are our principal forage crops and are in good condition. Potatoes are looking well and none have been dug as yet. Apples promise a good crop; about the usual amount of other fruits. Pastures are very dry. Rye, oats and barley are but little raised. About six acres of apple orchard have been set out in 1908 and 1909.

Chesterfield (HORATIO BISBEE). — Potato bugs are doing some damage. Indian corn is in fairly good condition; not over one-eighth of the crop is grown for ensilage. The hay crop was a large yield of good quality. Millet, Hungarian grass and corn are our principal forage crops. The apple crop is our main money crop and is not now very promising. Dry weather has injured pasturage. Oats are raised a little for forage; rye and barley not at all. One man set 200 apple trees.

Plainfield (C. A. WILLIAMS). — Potato bugs are the only insect causing damage. Corn is doing well, the warm weather pushing it along well; about half the crop goes into the silo. The hay crop was larger than for some years and of good quality. Barley, millet and fodder corn are our principal forage crops and are in good condition. Garden crops are looking well, also potatoes, but few are harvested as yet. There will be an average crop of fruit as a rule. Pasturage is in good condition for the time of year. Rye, oats and barley are fully average crops. There have been a few apple trees set in the last two years, but not enough by any one person to make an estimate as to the number of acres.

HAMPDEN COUNTY.

Tolland (E. M. MOORE). — Potato and squash bugs and horn flies are proving troublesome. Indian corn is in fair condition; about one-fourth the crop is grown for ensilage. Hay is about a normal

crop and of very good quality. Corn, oats, barley and rye are the forage crops grown. Apples and pears promise about 40 per cent of average crops. Feed is very poor in pastures. Rye was a very good crop and oats and barley are about average. No new apple orchards have been put in in this section. Springs, brooks and wells are getting low.

Blandford (ENOS W. BOISE). — Potato bugs are very plenty and flies are troubling stock badly. Indian corn shows a poor stand, but is making a good growth; nearly all the crop is grown for grain. The hay crop was much above the normal and of extra quality. Millet is our principal forage crop, with some oats. All garden crops are late and suffer from drought. Fruits bloomed full, but dry weather has caused the prospect now to be for light crops. Pasturage is in about average condition. Rye, oats and barley are above the normal. Some three or four parties have put out apple trees, perhaps 7 or 8 acres in all.

Southwick (L. A. FOWLER). — Potato bugs are doing some damage. Corn is in good condition, but needs rain; there are but few silos here. The hay crop was above the normal in quantity and of good quality. Oats, Hungarian grass and millet are the principal forage crops grown. Early potatoes yield well, price as last year; late ones need rain. The fruit crop will be a little below the average. Pasturage is drying up. Rye, oats and barley are above average crops. Tobacco promises well, but needs rain on light land.

Agawam (J. G. BURT). — Indian corn is a little backward and more than half the crop is grown for ensilage. There is a large hay crop of good quality. Forage crops have not been sown as yet, owing to dry weather. Potatoes look well, but none have been dug as yet. There will be a light crop of apples, but the prospect is good for other fruits. Pasturage is short. Rye, oats and barley are heavy crops. No orchards have been set out here to my knowledge. We must have rain soon if we are to have any crops.

West Springfield (T. A. ROGERS). — Squash vine borers and stock flies are our principal insects. Corn is growing well now, but is a week late; about one-fourth the crop is grown for the silo. Oats, corn and Hungarian grass are our forage crops, and are looking well. Early potatoes were injured by drought, and have not made half a crop; price about as usual. Apples have dropped badly; pears good; plums and grapes average; few quinces grown; some peaches. Pastures are very short and dry. Rye, oats and barley are generally good crops. A few apple trees have been set by different parties, not many acres in all.

Chicopee (E. L. SHAW). — Elm-leaf beetles are doing some damage. Corn is a little late, but is doing well now; about a third of the crop goes into the silo. Fertile fields have produced a large crop of hay of good quality. Rye, wheat, oats and peas, Japanese millet and

fodder corn are all grown for forage crops and have done well so far. Some market-garden crops show the effects of drought. Apples fair; pears good; peaches few; plums and quinces none; grapes good. Pasturage is suffering from drought. Rye and oats are a little better than average crops. Not many new apple trees have been set and the old ones are dying with San José scale.

Hampden (JOHN N. ISHAM). — Cabbage lice and stock flies are reported as troublesome. Indian corn is growing finely and about one-fourth the crop is raised for ensilage. The hay crop is fully a third better than last year. Oats and corn are our principal forage crops and both are in good condition. Market-garden crops need rain; prices compare well with other years. The prospect is good for most fruits. Pasturage has been good, but is now getting short. Several new apple orchards have been set, of from 200 to 400 trees each. Potatoes are more seriously affected by drought than our other crops, especially early ones. Haying is nearly completed.

Palmer (O. P. ALLEN). — The elm-leaf beetle is doing some damage. Corn is in fair condition, but is in need of rain. Hay was a fair average crop in quantity and quality. Corn and millet are the principal forage crops grown. Market-garden crops are in good condition, but later than usual; yields normal. There is prospect of an average crop of fruit. Pasturage is suffering from drought. Rye, oats and barley compare well with former years. No new apple orchards have been set out to my knowledge.

Brimfield (F. N. LAWRENCE). — Indian corn is late, but is coming fast this hot weather, but now needs rain; about one-third is grown for the silo. The hay crop is about average in quantity and quality. Millet is raised by some as a forage crop. Potatoes look well; no market-garden crops grown. Apples promise about one-third an average crop; pears one-half; peaches, plums, etc., light crops. Feed in pastures is badly dried up. Rye and oats have been good crops. No apple trees to amount to anything have been set out recently.

WORCESTER COUNTY.

Warren (W. E. PATRICK). — Very few insects doing damage, except potato bugs. Indian corn is very backward, possibly one-fourth of it will go into the silo. The hay crop is equal to the normal, both in quantity and quality. Millet and fodder corn are the principal forage crops grown, and are in poor condition. The weather is too dry for market-garden crops; no potatoes harvested yet. There will be light crops of apples, pears and peaches and very few grapes. Pasturage is in poor condition. Rye is a normal crop; there are some excellent fields of oats, but as a whole the crop is small.

West Brookfield (MYRON A. RICHARDSON). — Potato bugs, currant worms and striped squash bugs are doing damage. Indian corn is

looking finely, but needs rain; about 70 per cent of the corn crop will go into the silo. The hay crop that has been harvested is normal in quality and quantity. A large acreage of rye was raised this year as a forage crop, and some oats, both doing well. Garden truck is not raised here. There will not be many apples or small fruits if the drought continues much longer, as they are dropping badly. About three acres of apple trees have been set out in this town since the spring of 1909.

North Brookfield (JOHN H. LANE). — Cattle flies are very troublesome. Indian corn is about 65 in condition and 90 per cent of the crop will go into the silo. The hay crop was 25 per cent above last year in quantity and of extra quality. Millet, peas and oats are the principal forage crops grown. Potatoes are late and probably small, owing to dry weather. Apples and pears will give 25 per cent yields; plums 15 per cent; grapes half a crop. Pastures are badly burned by drought. Oats are an extra crop except on light land. Our people are not enthusiastic on the apple question. Only one small orchard has been set and that by men who do not know the conditions here.

Oakham (JESSE ALLEN). — Potato bugs are doing some damage. Indian corn is suffering from drought. The hay crop was fully average in quantity and of excellent quality. Corn and millet are the principal forage crops grown and both need rain badly. Market-garden crops, including potatoes, have suffered severely from drought; few if any have been harvested. The prospect is for light yields of all fruits. Pasturage is fast drying up. No new apple orchards have been set out in the past two years.

Dana (LYMAN RANDALL). — Potato bugs and wire worms are doing damage. Corn is uneven, but it is growing well now; about one-third of the crop is grown for ensilage. There is 20 per cent more hay than last year and the quality is better. Corn and oats are our principal forage crops; corn is looking fairly well and oats are better than average. Garden crops are in fair condition; potatoes yield rather light; yield and price of market-garden crops about average. Apples, pears and peaches promise fair yields; plums, grapes and cranberries will be very light. Not much rye or barley are raised; oats are more than average crops. There have been no apple orchards set here.

Templeton (LUCIEN GOVE). — Potato bugs, cabbage worms, squash bugs, brown-tail moths and elm-leaf beetles are doing damage. Indian corn is nearly two weeks late and uneven; three-fourths of the crop is grown for ensilage. The hay crop is heavier than last year and of good quality and secured in good condition. Oats, barley, Hungarian grass and millet are raised for forage; first two in good condition, last two rather light. The prospect is rather poor for market-garden crops; early potatoes very light; yield below average and price higher. Apples will be a light crop; pears medium; plums fair; grapes rather light. Pasturage is in very poor condition. Rye, oats

and barley are quite good crops. Apple trees are put out every year, but not on an extended scale.

Royalston (C. A. STIMSON). — Potato bugs are doing some damage. Corn is small and half the crop will go into the silo. There was a bumper hay crop of fine quality. Oats and barley are the principal forage crops grown and are in fair condition. Potatoes look fairly well; no market-garden crops grown. Apples and pears are fair crops; no peaches or plums; grapes good; cranberries not grown. Pasturage is in medium condition. Rye, oats and barley are good as forage crops; not grown for grain. No apple orchards have been set out here in the last two years.

Gardner (W. E. KNIGHT). — Potato bugs are doing some damage. Indian corn is in good condition; three-fourths of the crop is grown for ensilage. The hay crop was the largest for several years and of good quality. Barnyard millet is our principal forage crop and looks well. Potatoes look well; none dug as yet. Apples promise about an average crop; other fruit not raised to any extent. Pastures are getting dry. Rye, oats and barley are good crops. No new apple orchards have been set out during the past two years.

Ashburnham (E. D. GIBSON). — Cut worms are doing some damage. Corn is two weeks late and needs rain badly. Hay is a good crop of the best quality. Millet, barley and corn are the principal forage crops grown and all look well. Potatoes are not dug and are in need of rain. Apples and pears will give fair crops. There is little feed in pastures, many feeding from the barn. Rye, oats and barley are average crops. I do not know of any new apple orchards. Crops of all kinds, also mowings, are in need of rain.

Hubbardston (CHAS. C. COLBY). — Indian corn is very backward and several lots planted early for grain had to be replanted for ensilage; probably half the crop will go into the silo. The hay crop was of good quality and above the average in quantity. Oats, Hungarian grass and the millets are grown for forage and have made good growths. All market-garden crops, including potatoes, are looking well, but are late. At present the prospect is for a small apple crop. Pasturage is holding out well for so dry a season. Not many new orchards have been set, but some of the old ones have been renovated, and the results obtained will be carefully noted by other growers.

Princeton (A. O. TYLER). — Squash bugs and cut worms are doing some damage. Indian corn is backward, and owing to dry weather will be small; the greater portion will be used for ensilage. The hay crop was larger than last year in quantity and of good quality. Millet, Hungarian grass and oats are our forage crops, and are suffering somewhat from drought. Market-garden crops are in good condition, but dry weather is beginning to injure them; yield of those harvested fair and prices better than last year. Apples and pears fair; peaches, plums and quincees very few; grapes fair. Pasturage is in very poor

condition. Rye, oats and barley are about average crops. I know of no new apple orchards.

Leicester (H. H. KINGSBURY). — Potato bugs are doing some damage. The weather of July has been extremely favorable for corn; about one-fourth of the crop goes for ensilage. The hay crop was one-fourth above the average in quantity and of excellent quality. Hot weather has favored squashes, cucumbers, tomatoes and beans. The prospect now is good for a fair crop of apples, pears and grapes. Pasturage is quite short, owing to dry weather. Sowed grains have done well, making heavy growths. No commercial apple orchards have been set in this town for many years.

Charlton (LOREN E. STEVENS). — The potato bug is doing some damage. Indian corn is doing well, with fully two-thirds of the crop to be used for ensilage. The hay crop was larger in quantity than usual and of excellent quality. Millet is grown for forage, but is not doing well. No potatoes have been harvested. There seems to be but little fruit of any kind. Pasturage is good, considering the dry weather. Rye, oats and barley are not as good crops as usual. There have been no large orchards set. Springs in pastures are mostly dry and many farmers are drawing water.

MIDDLESEX COUNTY.

Hopkinton (W. V. THOMPSON). — Potato bugs, elm-leaf beetles and brown-tail moths are doing damage. Indian corn is in good condition, but needs rain; about one-half the crop is grown for ensilage. There was a splendid hay crop and of good quality, where cut early. The weather has been too dry to put in forage crops, except corn. Market-garden crops are not much raised. Apples need rain and are dropping; few pears; no peaches or plums; grapes good. Pasturage is drying up. Rye is little raised, but was a good crop; oats a good crop for forage. It is many years since an apple orchard was set out in this town.

Sudbury (EDGAR W. GOODNOW). — Gypsy and brown-tail moths are proving troublesome. Indian corn is doing well but is backward; about half the crop is grown for ensilage. The hay crop is normal in quantity and quality. Oats and millet are being raised for forage and are in good condition. Market-garden crops are beginning to feel the effects of dry weather. The prospect for apples and pears is favorable; few peaches, plums or cranberries are raised. Pastures are looking well. Rye, oats and barley are little raised.

Maynard (L. H. MAYNARD). — Potato bugs and elm-leaf beetles are doing serious damage. Indian corn looks well on low lands, on high land it is all dried up and has stopped growing. The hay crop is of good quality and about average in quantity. Oats are a good crop; Hungarian grass is grown to some extent for forage, but is suffering from drought. Market-garden crops are in need of rain; no potatoes

harvested as yet. Apples will be about half a crop; other fruits short, with the exception of grapes. Pastures are all dried up and in the poorest condition for years. Rye, oats and barley are about average crops. No new orchards have been set out in this town.

Westford (J. W. FLETCHER). — Gypsy moths are doing some damage. Corn is in good condition, but needs rain; about 25 per cent of the crop goes into the silo. The hay crop was the best we have had for several years. Feed in pastures is all dried up. There have been quite a large number of apple trees set here in the last two years, I should say enough for 25 or 30 acres.

Littleton (GEO. W. SANDERSON). — Brown-tail moths are being controlled by spraying, but the gypsy moths are on the increase. Corn is in need of rain; three-fourths of the crop is grown for ensilage. The hay crop was above the average and the weather since July 1 has been excellent for harvesting. Corn is the principal forage crop grown. Market-garden crops are in good condition; very few potatoes have been dug. The prospect is good for fruit, where trees have been sprayed, but the crop as a whole will be below average. Pasturage is in very good condition. About 25 acres of new orchard have been set out in 1909 and 1910.

Townsend (G. A. WILDER). — Brown-tail and gypsy moths are doing damage. There will be an average crop of Indian corn. The hay crop was above the average in quantity and quality. Corn for the silo is grown as a forage crop and is in good condition. Market-garden crops, including potatoes, are about in average condition. Apples promise a good crop; other fruits fair. Pasturage is in poor condition, owing to dry weather. Apple trees have been set only in small lots, perhaps 1,000 trees in all in the past two years.

Billerica (E. F. DICKINSON). — Brown-tail and gypsy moth caterpillars have been serious pests this season. Corn is feeling the drought and was late to start, so the prospect is only fair; about half the crop is grown for ensilage. There was a full average crop of hay, harvested in ideal hay weather. The ground is too dry for putting in forage crops as yet. Drought has retarded and injured market-garden crops. Apples promise a good crop; pears medium; peaches, plums and quincees not plenty. Pasturage has been injured by drought. Rye, oats and barley have done well. No separate apple orchards have been set out, but many trees, here and there.

Concord (Wm. H. HUNT). — Gypsy and brown-tail moths are doing damage. Indian corn is growing finely. Hay did well on new fields, but was a light crop on old fields. Oats, barley, corn and millet are the principal forage crops grown. Potatoes are looking fairly well, but have not been dug as yet. The apple crop will be light; pears a fair crop; other fruits average. Pasturage is rather light. Rye, oats and barley are a little below average crops. There have been very few fruit trees set out in the last two years.

Lincoln (C. S. WHEELER). — Gypsy and brown-tail moth caterpillars have been doing damage and the elm-leaf beetle is still at work. Corn is suffering from drought; three-fourths of the crop is grown for ensilage. The hay crop is about average in quality and 90 per cent of the normal in quantity. Japanese millet is our principal forage crop, and is backward, because of drought. All market-garden crops are in need of rain; few potatoes ready for digging; other crops doing well; early sweet corn looking the best. Apples and pears 60 per cent of a full crop; few peaches, plums or quinces; grapes fair. Pasturage is very dry and cows need stall feeding. Rye, oats and barley are average crops for forage; none raised for grain. Ten acres of new apple orchard have been set out.

Winchester (S. S. SYMMES). — The elm-leaf beetle is doing damage. Indian corn is not raised here. The hay crop was very heavy in yield and of fine quality. Market-garden crops are nearly dried up; prices fair, but yield very light. Apples are dropping fast on account of drought; peaches and other fruits light. Pasturage is badly dried up. Only a few scattering lots of apple trees have been set in this town. Continued dry weather has been fine for haying, but has nearly ruined market-gardens, especially tomatoes and celery.

Stoneham (J. E. WILEY). — We have sprayed so much that there is not much trouble from insects. The hay crop was light. No potatoes have been dug as yet. Apples and pears are fair crops; no peaches; grapes heavy. Pasturage is dry. Rye is looking finely. I do not know of any new apple orchards set in the last two years.

Weston (HENRY L. BROWN). — Corn is not much grown except for ensilage. The hay crop was about average in quantity and of good quality. With the exception of asparagus, which only gave about half a crop, both yield and prices of market-garden crops have been average. There will be a good crop of fall apples and pears; no peaches; plums, quinces, grapes and cranberries not grown to any extent. Feed in pastures is very short and dry. Rye, oats and barley are not grown for grain, and have done well for forage. One apple orchard, of perhaps 500 trees, has been set out. Rain is very much needed; no prospect of rowen.

ESSEX COUNTY.

Amesbury (F. W. SARGENT). — Potato bugs and onion maggots are doing some damage. Indian corn is in good condition and about one-third the crop is grown for ensilage. There was a full hay crop of prime quality. Corn, Hungarian grass, millet and oats are grown for forage and are in good condition. Market-garden crops were late in starting, but finally did well; potatoes need rain. There is a fair prospect for all fruit crops. Pastures were in good condition early in the season, but are dry now. Rye, oats and barley are average crops. I know of no large apple orchards being set out, usual number of new trees set.

Merrimac (S. BIXBY SARGENT). — Gypsy moth caterpillars and black squash bugs are doing damage. Indian corn is late; three fourths or more of the crop is grown for ensilage. The hay crop was very good, except on old, runout fields. All market-garden crops need rain, yield and price average well with former years. There is a fair prospect for apples. Pasturage is dried up. Rye, oats and barley are very good crops. No orchards have been set in this town in the past two years.

Methuen (FREDERICK A. RUSSELL). — Gypsy and brown-tail moths and tent caterpillars are doing damage. Corn is rather small, but is helped somewhat by recent hot weather; the larger part of the crop is grown for the silo. Quality of the hay crop good and quantity about 50 per cent above last year. Corn is the principal forage crop grown and is in fair condition. Market-garden crops are fair; few potatoes harvested as yet; prices low. Apples and pears promise well; very few other fruits raised. Pasturage is in need of rain. Good crops of rye, oats and barley are reported. Very few apple trees have been set out.

Newbury (GEORGE W. ADAMS). — Tent caterpillars, gypsy moths and brown-tail moths are doing damage. Indian corn is in fair condition; perhaps half the crop will go into the silo, but the proportion is growing less. The hay crop was light, but of good quality. There is a little fodder corn and some oats raised for forage and they are in good condition. The extreme dry weather has injured potatoes seriously; other market-garden crops fair. As a whole the prospect for fruit is a little below the average; pears and peaches much below. Pasturage is in very fair condition, but shows lack of rain. Rye, oats and barley are fair average crops. I have heard of no new apple orchards being set out. Farmers are badly handicapped by lack of farm labor. Owing to lack of profit, milk production is constantly deereasing, and there is now a scarcity.

Rowley (D. H. O'BRIEN). — Gypsy moth caterpillars and potato bugs are doing damage. Indian corn is in fair condition; very little is raised for the silo. The quantity of the hay crop is normal and the quality first class. Peas and oats are our principal forage crop and are in fair condition. Garden crops are in poor condition; no potatoes harvested. Apples, pears and peaches promise poor crops; grapes and cranberries medium. Pasturage is in very poor condition. Rye, oats and barley compare favorably with former years. About four acres of new apple orchard have been set out this year. Extreme dry weather has spoiled many crops.

Wenham (N. P. PERKINS). — Black squash bugs, the onion louse and the gypsy moth are all doing damage. Corn is in about normal condition; four-fifths of the crop goes into the silo. Hay was about an average crop, of good quality. Hungarian grass, corn, millet, oats and barley are grown for forage and are looking well, but need rain.

No market-garden crops harvested as yet; carrots poor; cabbages average; potatoes look well. There will be very few apples; some pears; no peaches, plums or quinces. Feed in pastures is drying up fast and farmers have commenced to feed at the barn. Rye, oats and barley were good crops for forage. I have heard of no apple orchards being set out. But few onions sown; apples dropping badly; beets sown last week failed to germinate; prospect not good for squashes and cucumbers.

NORFOLK COUNTY.

Randolph (RUFUS A. THAYER).—Gypsy moths and potato bugs are doing some damage. Corn looks well; nine-tenths of the crop is used for ensilage. The hay crop is a good average crop of good quality. Corn, barley and millet are the principal forage crops grown. Market-garden crops are in good condition; prices fair and yields average. Apples promise well; pears good; grapes look well. Pasturage is pretty dry, except on low land. Rye, oats and barley are good crops and all used as forage. No new apple orchards are being set out. Rain is now very much needed.

Norwood (FRANK A. FALES).—Potato bugs and elm-leaf beetles are doing some damage. Indian corn has improved in the last month; about 25 per cent of the crop is grown for ensilage. The hay crop is about 75 per cent of the normal in yield and of good quality. Japanese and golden millet and Hungarian grass are raised as forage crops and are in fair condition. Market-garden crops are rather backward, but are in good condition, with prices better than last year. Apples, grapes and pears are looking well, but the weather is dry for a good crop. Pastures are drying up. Rye and oats have given good crops. No apple orchards have been set out in this town.

Westwood (HENRY E. WEATHERBEE).—Potato bugs are more plentiful than usual. Indian corn is looking well, but is rather late; very few silos in this locality. The hay crop is above the average in quantity and quality. Fodder corn and Hungarian grass are grown as forage crops and both are looking well. Market-garden crops are doing well. Apples and grapes will be good crops. Pasturage is drying up. Very little rye and barley are raised in this vicinity. I do not know of any new apple orchards being set out in this town.

Foxborough (WILLIAM E. PERKINS).—The corn crop is below normal in condition; about two-thirds goes into the silo. The hay crop was above average in quantity and of good quality. Hungarian grass, oats and peas, and millet are the principal forage crops grown, and are suffering from drought. Market garden crops are suffering from dry weather and have given short yields, prices about as last year. The prospect is poor for fruit of all kinds. Pasturage is dry. Rye, oats and barley are normal crops.

Franklin (C. M. ALLEN).—Insects have not been as troublesome as

usual. Indian corn is about in average condition and one-half the crop is grown for the silo. The hay crop was heavier than usual, and we had no rain while securing it. The prices for market-garden crops have been a little higher than usual, and the prospect is for a medium crop. Apples good; pears few; cranberries good. Rye, oats and barley are more than average crops. Very few apple trees have been set out in this town.

Millis (E. F. RICHARDSON). — Potato bugs are doing some damage. Indian corn is a little backward, but growing finely now; 90 per cent of the crop is grown for ensilage. The hay crop was extra in quantity and quality. Oats and peas, millet and corn are our principal forage crops and are in very fair condition. Market-garden crops are light yields and high in price. The prospect is good for apples, pears and grapes; and very poor for other fruits. Pasturage is dried up. Rye, oats and barley are better than average crops. About 20 acres of new apple orchard have been set in town the past two years.

BRISTOL COUNTY.

Mansfield (E. JASPER FISHER). — Elm-leaf beetles are doing some damage. Corn is doing very well; 10 per cent of the crop will go for ensilage. The hay crop was somewhat larger than last year, but the quality was about the same. Market-garden crops are in very good condition and prices are a little higher than last year. Pasturage is in fairly good condition. Rye and oats are good crops; barley not raised. Nothing to speak of has been done in planting apple orchards.

Attleborough (ISAAC ALGER). — Potato bugs are doing some damage. Indian corn is in very good condition and half the crop will go into the silo. Hay was a full average crop as to quantity and of excellent quality. Millet is our principal forage crop and is in good condition. Potatoes are looking well, but none have been dug as yet. The outlook for all fruits is very poor. Pastures are in fair condition. Oats are better than an average crop. No new apple orchards have been set out recently.

Raynham (J. R. LAWRENCE). — Cut worms, elm-leaf beetles and cucumber beetles are doing damage. Corn is suffering for lack of rain and only a small part of the crop is used for ensilage. The hay crop was heavier and better than usual, with the promise, if we have rain soon, of a good rowen crop. Millet is our principal forage crop and is looking well. Yield of market-garden crops variable; no potatoes sold as yet; prices for market-garden crops better than usual. Apples, pears, plums and grapes promise well; peaches short, owing to frost damage; few quinces; no cranberries grown in town. Pasturage is drying up. Rye, oats and barley are about average crops. No new apple orchards have been set.

Seekonk (JOHN W. PECK). — Insects have not been very trouble-

some. Indian corn is looking well and three-fourths of the crop will go into the silo. The hay crop was good both in quantity and quality, and we had good weather for getting it. Oats and peas, barley, Hungarian grass and millet are our forage crops and are looking well. Market-garden crops are in fairly good condition; potatoes have yielded well; prices somewhat lower than usual. All fruits have improved during the month and the prospect is good if we have plenty of rain. Pasturage is beginning to dry up. Rye, oats and barley are good crops. I have seen a few new orchards of four or five acres each, and some smaller lots, perhaps thirty acres in town.

Berkley (ROLLIN H. BABBITT). — Potato bugs are doing some damage. Corn is coming along finely, but needs rain; very little will be used for ensilage. Hay was an average crop of the best quality. Oats corn and barley are our principal forage crops and all look well. All market-garden crops are in need of rain; those harvested have been fairly profitable. Apples will be a light crop; a few pears; no peaches; not many plums; grapes and cranberries promise fair crops. Feed has been good in pastures, but rain is now needed. Rye, oats and barley are about average crops. A few new orchards have been set out this year, but the acreage is small. Our farmers are just beginning to get interested in fruit raising.

Acushnet (M. S. DOUGLAS). — Asparagus beetles and cut worms are doing some damage. Indian corn is in very good condition and growing finely; not many silos in town. Quantity of hay crop above average and quality good. Millet is our principal forage crop and is in good condition. Market-garden crops, including potatoes have been good, with prices lower than in former years. There will be a poor fruit crop generally; quinces and grapes fair. Pasturage is in good condition. Rye, oats and barley are fully up to the normal. Quite a number of apple trees have been set in the last year, to replace old trees. Raspberries are only half a crop, canes and leaves dying.

PLYMOUTH COUNTY.

Norwell (HENRY A. TURNER). — Potato bugs are doing some damage. Corn is looking well and there is hardly any cut for ensilage. The hay crop was about normal in quantity and of good quality. Very few raise forage crops in this locality. Potatoes are looking well, but it is early to judge as to the outcome. The prospect for apples is poor; also pears, peaches and quinces. Grain crops are little raised here. Very few apple trees have been set out here.

West Bridgewater (CLINTON P. HOWARD). — Elm-leaf beetles are doing some damage. Indian corn is very late, but is looking well; one-third the crop is planted for the silo. There was a large crop of hay and it was housed in the best condition. Corn, oats and rye are our principal forage crops and a few sow peas with oats or barley.

All market-garden crops look well. The fruit crop will not be over two-thirds that of last year. Pasturage is in very good condition. Rye, oats and barley are looking well. More apple trees are being set out this year than for ten years previous. Orchards have been set out in most cases by city men, who have bought old farms for this purpose.

Plympton (WINTHROP FILLEBROWN). — Potato bugs, squash bugs, gypsy moths and elm-leaf beetles are doing damage. Corn is in good condition considering the dry weather. The hay crop exceeds that of the past few years in both quantity and quality. Forage crops are in good condition. Market-garden crops are in need of rain; prices as usual. Apples will be a fair crop; other fruits deficient; cranberries promise a good crop. Pasturage is holding out well. Rye, oats and barley have made excellent growth this year. One or two have set out new orchards and a keen interest is being taken in the apple crop.

Lakeville (NATHANIEL G. STAPLES). — Potato bugs are doing some damage. Indian corn is in very good condition; a small part of the crop only is grown for ensilage. There is quite an increase in the quantity of the hay crop and it was of good quality. Corn, Hungarian grass and millet are our principal forage crops. Market-garden crops are looking well; few potatoes dug as yet; prices a little lower than usual. Apples and pears promise light crops; other fruits medium. Pastures are dry. Rye, oats and barley are in excellent condition. About 10 acres of new apple orchard have been set out.

Carver (J. A. VAUGHAN). — Potato bugs are doing some damage. Indian corn is in good condition; none grown here for ensilage. There was a good crop of hay, which was secured in good order. Millet is our principal forage crop. Potatoes are looking well, except on light land. There are but few apples or pears and no peaches or plums. Pasturage is dried up. Only a few apple trees have been set in the last two years.

Rochester (GEO. H. RANDALL). — Cut worms, potato bugs and elm-leaf beetles are doing damage. Indian corn is in thrifty condition; about half the crop is grown for ensilage and green feeding. The hay crop is above the normal and of the best quality. Corn and millet are our principal forage crops and the early planted pieces are in good condition. Yield of market-garden crops good; prices somewhat higher than usual, except for potatoes. Fruits are uneven and generally promise light yields; pears a little better than the others. Pastures are fed close and feed is short. Rye, oats and barley are good crops. Very few apple trees have been set in the past two years. Conditions are generally good for late potatoes and root crops.

BARNSTABLE COUNTY.

Bourne (DAVID N. NYE). — Indian corn is in good condition; none grown for ensilage. Hay was about an average crop in quantity and quality. Sweet corn and oats are our principal forage crops. Con-

ditions of market-garden crops very good; yield and prices compare well with former years. Apples are scarce; there will be a few pears; cranberries average; peaches and plums light. Feed in pastures is getting short on account of dry weather. Rye, oats and barley are little raised. Very little has been done in setting out fruit trees of any kind, this year or last.

Falmouth (D. R. WICKS). — Potato bugs are doing some damage. Corn is looking well and making good growth; not more than ten per cent of the crop is grown for ensilage. The hay crop was 75 per cent of the normal in quantity and of fair quality. Oats, corn and millet are our principal forage crops; oats have rusted; corn and millet in good condition. Potatoes are showing blight and promise poorly. Apples are a failure; pears good; peaches, plums and quincees a failure; grapes and cranberries fair. Pasturage is getting short. Rye and barley are about normal crops, but oats have rusted. Very few apple trees have been set here for the past two years. Large fruit growing here is, I think, a thing of the past. I have been setting trees for many years and have many different varieties, both dwarf and standard, but I get no fruit, though there was plenty of good fruit grown here 70 years ago.

Mashpee (W. F. HAMMOND). — Potato bugs, cut worms and cranberry vine worms are doing damage. Indian corn is above the average in condition. Hay was above an average crop of good quality. Oats and wheat are being raised for forage. Market-garden crops are looking well, about average in price and yield. Apples, pears and plums will be about a failure; cranberries two-thirds of a normal crop. Pasturage is above the average in condition. Rye and oats are good crops, both as grain and forage. No new orchards have been started.

Dennis (JOSHUA CROWELL). — The elm-leaf beetle is the only insect at all troublesome at present. Indian corn is in good condition and little grown for ensilage. Hay was an average crop of good quality. Corn is our principal forage crop. Market-garden crops are in fair condition; potatoes look well; yield and prices about as last year. Apples and pears are not as good as last year; cranberries about an average crop. Pasturage is in good condition for the time of year. Rye, oats and barley are very little grown. No new apple orchards have been set out recently. All farm crops are looking fairly well at present.

Brewster (THOMAS D. SEARS). — Cranberry vine worms are the only insects doing damage at present. Corn is looking well and about one-third of the crop is grown for the silo. There is a large crop of hay of fine quality. Forage crops are not much raised here. Market-gardens are looking well; yield and prices compare favorably with former years. The prospect for apples is poor; other fruits, including cranberries, fairly good. Owing to dry weather pasturage is in poor condition. The outlook for grain crops is fairly good. About four acres of apple orchard have been set out during the past year.

Truro (JOHN B. DYER). — Corn is in fair condition; none grown for ensilage. Upland hay was a better crop than usual. Forage crops are little raised. Market-garden crops are good, with prices in advance of former years. Apples are about a failure, also pears; peaches fair; cranberries promise well. Pasturage is now in fair condition, having been extra good up to the present time. Old orchards have been added to, but few if any new orchards have been started. Rye, oats and barley are average crops.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE). — Potato bugs are doing some damage. Indian corn is in good condition and about one-fourth the crop is grown for ensilage. The quantity of the hay crop is about average, and the quality is good. Corn is our principal forage crop and is in good condition. Market-garden crops are about average in condition and price. Apples, pears and other fruits promise poorly; cranberries average. Pasturage is in good condition. Rye, oats and barley are about average crops. No new orchards have been set out in the last two years.

NANTUCKET COUNTY.

Nantucket (H. G. WORTH). — Potato bugs and cut worms are doing some damage. Corn is in good condition; none grown for ensilage. There was a good hay crop of good quality. Corn and oats are our principal forage crops and are in good condition. Market-garden crops are in good condition, with yields and prices good for those harvested. The outlook for a good crop of cranberries is good; no other fruits raised here. Pasturage was never in better condition. Rye, oats and barley are fully up to former years. No apples are raised in this county.

BULLETIN OF MASSACHUSETTS BOARD OF AGRICULTURE.

ALFALFA AS A CROP IN MASSACHUSETTS.

By PROF. WM. P. BROOKS, *Director Massachusetts Agricultural Experiment Station.*

Alfalfa has been under trial, both at the experiment station and on a considerable number of private farms, for several years. It has been found that a good start and a thick stand are not very difficult to obtain, but in many cases, both on the experiment station grounds and on private farms, the alfalfa has frequently died out within two or three years, giving place, with greater or less rapidity, to grasses and clovers. During the past few years, however, we have been obtaining better success than formerly. There are now several small areas of alfalfa on station and college grounds which are from four to six years old and which are still in very good condition. The writer has heard also of a number of cases in which private farmers are also meeting with much better success than was common a few years ago.

Even should alfalfa hold the ground only three or four years, it would, in the opinion of some of those who have given it longest trial, still be well worth growing on account of its high value for forage, whether green or dry.

The principal advantages of alfalfa as compared with clover are four:—

1. Larger total yield, if thoroughly successful. The experiments carried out at Amherst up to the present time have been upon too small a scale to determine the yield to be expected from alfalfa, but, so far as can be judged, it seems probable that in seasons with well-distributed and moderate rainfall a total yield in three crops of from five to six tons of hay may be anticipated on good land.

2. The first crop is ready to cut and feed at least two weeks earlier than clover.

3. It starts after cutting more quickly than clover, usually furnishing three crops annually.

4. It is considerably finer than clover, and is therefore more palatable and cures more easily.

So far as can be judged from figures showing composition, alfalfa

apparently does not exceed the clovers in nutritive value to as great a degree as is often supposed. The following table illustrates this point:—

Composition of Clover and Alfalfa Hays.

	Water (Per Cent.).	Ash (Per Cent.).	Protein (Per Cent.).	Fiber (Per Cent.).	Nitro- gen-free Extract (Per Cent.).	Fat (Per Cent.).
Alfalfa hay, ¹ . . .	15.00	7.90	13.50	27.20	33.20	3.20
Alfalfa hay, ² . . .	13.24	7.29	16.14	34.49	40.52	1.56
Alsike clover hay, ² . .	15.00	9.70	14.00	23.10	36.10	2.10
Medium red clover hay, ² . .	15.00	7.60	13.20	24.20	37.40	2.60

¹ Calculated on the basis of two analyses published by the New Jersey Agricultural Experiment Station.

² Average of analyses of the Massachusetts Agricultural Experiment Station.

On account of its superior fineness alfalfa will usually prove somewhat more palatable than clover, but the figures of the above table indicate that there may be no very wide difference in the nutritive values of alfalfa and clover hays. Comparative determinations of the digestibility of these two kinds of hay, produced under American conditions, are, however, desirable.

SOIL REQUIREMENTS.

Alfalfa may be made to succeed on a variety of soils provided these meet certain requirements, but whatever the type of soil it should be naturally thoroughly underdrained. If standing water is found during any part of the growing season within less than six to eight feet of the surface alfalfa is sure to do poorly. It is essential, further, that there should be perfect surface drainage. Standing water or ice, particularly the latter, will destroy alfalfa in a relatively short time. The highest degree of success with alfalfa appears to have been attained on moderately heavy soils. The soils of the typical drumlins of the State, strong, retentive, gravelly loams, appear in most cases to be well adapted to this crop. A subsoil of medium texture, and one which will not retain too large a proportion of water, is desirable. It is highly important that the soil be free from the seeds or living roots of weeds. The presence of witch grass is highly undesirable. Localities where sweet clover, *Melilotus alba*, grows naturally are likely to be peculiarly adapted to alfalfa, as also are those districts where the soils are rich in lime.

PREPARATION OF THE SOIL.

In preparing for alfalfa the most thorough possible tillage and such treatment as will leave the surface soil entirely free from weeds or the living roots of weeds, such as witch grass, are of prime importance.

If the soil is fertile, and if a very early crop which can be so cultivated as to leave the soil in good tilth and free from weeds will be profitable, then such a crop may wisely precede alfalfa; but it is desirable that such a crop be harvested not later than about the middle of July in order to allow a sufficient interval for the thorough tillage which is desirable before the seed of the alfalfa be sown.

If the cultivation of such an early crop as has been above referred to does not promise to be profitable, or if the soil has not been previously limed and enriched, then a summer fallow will be found to be highly beneficial. In this case the rule should be to plow in the fall if possible; if not, then in early spring, and to harrow with sufficient frequency during the spring and early summer to destroy all weeds as they start and to bring the soil into a fine mellow condition before sowing the seed. Under this system of management the surface soil is made mellow and fine, capillary connection between the surface and the subsoil is thoroughly established, so that water rises freely from below toward the surface, and the surface soil, as a result of the frequent stirring which it has received and the subsequent germination and later the destruction of successive crops of weeds, is brought into the best possible condition for the rapid, early growth of the alfalfa, unchecked by the competition of weeds. The following are the details for the system of preparation for alfalfa which is especially recommended:—

1. Plow the land the previous fall or in the early spring.
2. Apply lime at the rate of about $1\frac{1}{2}$ tons per acre to the rough furrow, either in the fall or early spring, and immediately incorporate it thoroughly with the soil by the use of the disk harrow.
3. Harrow throughout the spring and early summer at intervals as frequent as may be necessary to destroy the successive crops of weeds as they start, and to bring the soil into the finest tilth.
4. About mid-spring, just previous to one of the harrowings which the land is to receive, apply the following mixture of materials per acre: basic slag meal, 1,500 to 2,000 pounds; high-grade sulfate of potash, 300 to 400 pounds; or, if it can be obtained, low-grade sulfate of potash, 600 to 800 pounds. This mixture should be spread evenly and at once thoroughly harrowed into the soil.
5. When ready to sow the seed apply the following mixture of materials per acre: basic slag meal, 300 pounds; nitrate of soda, 75 to 100 pounds. Spread this evenly and work in lightly with the smoothing harrow.

THE AMOUNT AND QUANTITY OF LIME NEEDED.

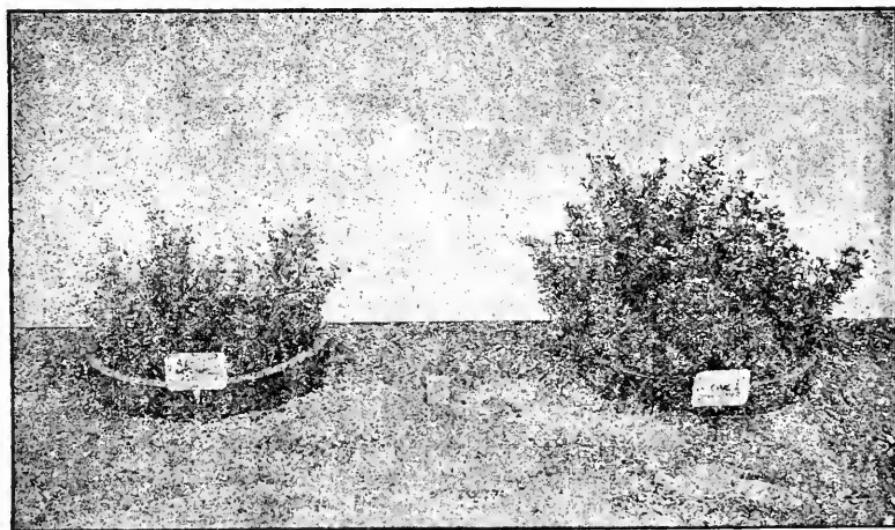
For all soils which incline to be heavy and which show some tendency to work up into clods and hard lumps, some form of burnt lime will be found best. Three kinds of burnt lime are now offered for sale in our markets: (1) the ordinary lump lime, which should be slaked

with just enough water to cause it to crumble into a fine, dry powder before application; (2) granulated lime, which can be spread at once, when it will slake in the soil; (3) the coarse lime, separated from the finer in the manufacture of hydrated lime by the modern method. This lime is suitable for immediate application and when mixed with the soil will take up moisture and slake. Either the granulated lime or the grade last referred to should prove especially effective for improving the texture and tilth of the heavy soils.

For use on the lighter soils, one of the so-called "agricultural" limes, which are in considerable measure made up of carbonate or air-slaked lime, will prove satisfactory.

There appear to be but few sections of the State where a comparatively heavy dressing of lime is not a necessity for satisfactory results with alfalfa. The cut clearly illustrates the benefit which usually follows.

ALFALFA.



No Lime.

Lime.

The alfalfa shown in the cut is growing in cylinders 4 feet deep, which were first set into the ground. They were each then filled with equal quantities of thoroughly mixed soil. With the surface soil of one cylinder, lime at the rate of $1\frac{1}{2}$ tons per acre was thoroughly mixed. The other was left without lime, and both then received a liberal application of fertilizers. Under the conditions of this experiment we know that the soil in the two cylinders was of precisely the same character at the start, and the difference in growth must surely have been due to the influence of the lime.

FERTILIZERS FOR ALFALFA.

There can be no one combination of fertilizers or no one mixed fertilizer which under all conditions will prove best. It will be generally admitted, however, by all qualified to judge, that on soils which are in a fairly productive condition at the start the fertilizers applied should furnish relatively large amounts of the mineral elements of plant food, among which phosphoric acid, potash and lime are the most important. Alfalfa, like other legumes, is capable of drawing upon the air for most of the nitrogen which it needs, and applied nitrogen in the form of a fertilizer in any large amounts is unnecessary. We may state the case even more strongly, — it is not only unnecessary, it may positively prove harmful. If it exercises a harmful effect, however, this will not usually be because the presence of nitrogen in the soil is necessarily injurious to the alfalfa, but because its presence increases the competition of the grasses for the possession of the field. In a soil well stocked with lime, phosphoric acid and potash, but without available nitrogen in considerable amounts, the grasses make only a feeble growth. If, in addition to the phosphoric acid, potash and lime, we apply to such soil too large amounts of nitrogen, the grasses in our humid climate will gradually come in, with the probability of crowding out the alfalfa with greater or less rapidity. It is the belief of the writer that combinations of basic slag meal and sulfates of potash are peculiarly adapted to alfalfa. The slag meal furnishes not only phosphoric acid but lime, which will help to bring the soil into condition for alfalfa and to maintain it in that condition. The sulfate of potash, on all the heavier soils especially, is superior to muriate. Many other suitable combinations of materials might be made up. Wood ashes should give good results. Combinations of such grades of bone meal as contain relatively low percentages of nitrogen and of either the low or high grade sulfate of potash should do well. Mixed fertilizers, containing not more than $1\frac{1}{2}$ per cent of nitrogen but with 12 or more per cent of phosphoric acid and 8 to 10 per cent of potash, should generally give good results.

THE USE OF MANURE.

Whether manure should be applied either in preparation for alfalfa or as a top dressing depends upon conditions. If a supply of fine manure, free from weed seeds, is available, and if the soil is in a very low state of fertility, a dressing of manure may be highly beneficial; but on soils already in good condition the application of manure is not called for, and from some points of view is undesirable. It almost invariably carries weed seeds, and its use produces the conditions already referred to under which, since it supplies an abundance of quickly available nitrogen, the grasses thrive. If manure is used, then it will usually mean that the grasses will tend to crowd out the

alfalfa in greater degree than would be the case had manure been withheld. It seems wise, therefore, except upon soils which are exceptionally low in fertility at the start, to depend mainly upon fertilizers alone.

SEED.

Great care should be taken to secure the very best seed, and that grown as far to the north as possible should be preferred to southern grown seed. Buyers should be on their guard against seed mixed with dodder. One or two cases have been brought to the attention of the writer in which the experiments have been absolutely ruined because of the presence of the seed of this parasite mixed with the alfalfa seed sown. The seed of dodder is very minute, and the purchaser, if in doubt as to the freedom of any lot of seed offered from this parasite, should send it to the experiment station for examination. There are a number of varieties of alfalfa on trial in this country, but the experiment work carried on at Amherst has not thus far indicated a wide difference in the value of the different kinds offered by seedsmen.

The quantity of seed which usually seems to give most satisfactory results is about 30 pounds per acre.

TIME AND METHOD OF SEEDING.

It is believed that the best results with alfalfa will usually be obtained by sowing it alone about July 20 to August 5. Care should be taken to put the seed into the ground when the moisture conditions are such that it will germinate promptly. It is highly important that it should come up quickly in order to get started ahead of weeds. During the past two seasons, alfalfa sown about August 5 in Amherst has attained a height in excess of a foot previous to the coming of cold weather, and the alfalfa which has been sown at this season has made a thicker and more even stand, freer from weeds and grasses, than any which we have obtained by sowing at any other season.

Good results are sometimes obtained by sowing the seed early in spring, with oats or barley thinly sown as a nurse crop. Alfalfa sown at this season often starts well, but, like the grasses and clover sown at that season, is often injured by the hot, dry weather likely to prevail when the nurse crop is cut.

In some of our early experiments in Amherst, alfalfa was sown in close drills, but this method has now been given up in favor of broadcast sowing, after the most thorough possible preparation of the soil to insure freedom from weeds. In the case of alfalfa sown late in July or early in August, it has been the practice in Amherst to allow all growth made during the autumn to remain uncut for winter protection.

SOIL INOCULATION.

In localities in which sweet clover does not naturally grow, inoculation of the seed or soil with the bacteria which develop nodules upon the roots, and which give the plant the capacity to assimilate atmospheric nitrogen, is advised. If sweet clover is indigenous in the locality such inoculation is unnecessary, as the bacteria which develop nodules on the roots of sweet clover appear to be identical with those found on alfalfa roots. If inoculation is necessary it can be carried out in two ways:—

1. An artificial culture may be obtained and used in accordance with the directions accompanying it. Such cultures are sent out both by the United States Department of Agriculture, Washington, D. C., and by a number of private companies. The cultures now offered appear to be much superior to those earlier produced, and the most recent experiments at the experiment station with a culture furnished by one of the private companies have given very satisfactory results. The use of a culture will, on the whole, be found rather less troublesome than the second method. In ordering a culture, it is necessary to name the crop for which it is wanted and the area which is to be sown.

2. Soil from an old and successful alfalfa field may be mixed with the soil of the area to be sown; 300 or 400 pounds per acre, if thoroughly stocked with the needed bacteria, will prove sufficient, and it is possible that less would answer. If soil is used, it should be remembered that exposure of the germs to the light, even if only for a short time, destroys their vitality. It is advisable, therefore, to harrow in the germ-carrying soil as promptly as possible after spreading.

LEAF SPOT OR RUST.

Alfalfa appears to be peculiarly subject in our climate to this parasitic disease. The presence of the disease is indicated by the appearance of small, dark-colored spots upon the lower leaves. If the weather conditions are favorable to the rapid increase of the parasite it spreads quickly to the upper leaves, and later first the lower leaves and then the upper may turn yellow and fall. In some cases the disease shows itself only on the lower leaves; the foliage on the upper part of the plant continues healthy and the injury may not be great. In damp or rainy weather the disease, however, often spreads with great rapidity, the growth of the crop is checked and the vitality of the plants is greatly weakened.

When this disease shows a tendency to spread rapidly, it is best to cut the alfalfa immediately. Under this treatment a healthy growth will soon start, while if the diseased plants are allowed to stand they will be greatly weakened, and the subsequent crops much reduced. During the past season leaf spot has been unusually prevalent and in

some fields has done great injury. Just how serious the disease will ultimately prove cannot at present be stated.

If leaf spot shows itself in a newly seeded field, while the plants are young, it is best to go over it with the mowing machine, allowing the cuttings to lie where they fall. They will serve to furnish mulch and winter protection, which are so greatly needed in our climate, and their presence does not necessarily appear to increase the probability of the spread of the disease.

HARVESTING ALFALFA.

Alfalfa should usually be cut as soon as it is in bloom. If allowed to stand much beyond the period of early bloom the plants start much less promptly after being cut and the total yield of the season will be relatively small. The last cutting in any season should not be too late. It is desirable that there should be a considerable growth remaining on the field for winter protection.

After cutting, alfalfa should be allowed to lie, with possibly one turning, until it is wilted. It should then be put into windrows and later into cocks, where it should be allowed to remain until cured. If hay caps can be used the results will be more satisfactory. Should the time required in curing exceed about five days, the cocks should be moved to avoid injury to the roots, and it is desirable, as in the case of clover, which is often similarly handled, to remove the caps and open or turn over the cocks on the morning of a good day, when it is judged to be sufficiently cured to be put in.

ANNUAL TOP-DRESSING.

If the crop has been successfully inoculated, or if the nodules which have been referred to are abundant on the feeding rootlets of the alfalfa plants, it will not be necessary to top-dress with materials furnishing nitrogen, or, at least, if such materials are at all required, as may be the case upon soils which are naturally very poor and light, they should be used only in moderate quantities. It is necessary, however, in order to secure large crops to supply the mineral elements of plant food in abundance. The following mixture of materials is recommended, annually, per acre: basic slag meal, 1,200 to 1,500 pounds; high-grade sulfate of potash, 250 to 350 pounds; or low-grade sulfate of potash, 500 to 700 pounds. This mixture may be applied either in the autumn or in very early spring.

CONCLUSION.

While the writer does not yet feel perfectly confident that alfalfa will establish itself in all localities as one of our valuable farm crops, he would express himself as now beginning to hope that it can be made to succeed. He would, however, counsel some caution at the start, and would urge that small trial areas be put in in all localities

where soils of the right character are found. He would call particular attention to the fact that the successful cultivation of alfalfa would not only mean a valuable addition to our forage crops, but would also mean soil improvement, for where alfalfa has been successfully grown the soils are sure to be rendered more productive. This improvement in the case of alfalfa would be a consequence, first, of the extensive subsoiling due to the deep penetration of the great tap roots of the plant; and, second, to an accumulation of nitrogen in roots and stubble, drawn in the first instance from the air. It will be understood that when an alfalfa sod is plowed this nitrogen will become available to succeeding crops.

SERIES OF 1910.

VOL. 23. No. 4.

MASSACHUSETTS CROP REPORT

FOR THE

MONTH OF AUGUST, 1910.

CELERY GROWING.

*ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.*

J. LEWIS ELLSWORTH, *Secretary.*

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CROP REPORT FOR THE MONTH OF AUGUST, 1910.

OFFICE OF STATE BOARD OF AGRICULTURE,
BOSTON, MASS., Sept. 1, 1910.

Bulletin No. 4 for the current year, Crop Report for the month of August, is herewith presented. The time has arrived when estimates of condition for most farm crops can be relied on as fairly forecasting the final results, making this bulletin particularly interesting. An article is included on "Celery growing, storing and marketing," by Henry M. Howard of West Newton, Mass. Mr. Howard is a young man who has made a great success in market gardening, and is fully posted on the subject of celery production and handling. The article is plain and common-sense in its treatment, and full of valuable matter for any one who is either contemplating introducing this crop or at present engaged in its production.

PROGRESS OF THE SEASON.

The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture (Crop Reporter for July, 1910) estimates that the average condition of corn on August 1 was 79.3, as compared with 85.4 last month, 84.4 on Aug. 1, 1909, and 82.1, the ten-year average.

Preliminary returns indicate a winter wheat yield of about 15.8 bushels per acre, or a total of about 458,294,000, as compared with 15.8 and 446,366,000 bushels, respectively, as finally estimated last year. The average quality of the crop is 92.6, against 90.3 last year. The average condition of spring wheat on August 1 was 61, as compared with 61.6 last month, 91.6 on Aug. 1, 1909, and 81.9, the ten-year average on August 1.

The average condition of the oat crop on August 1 was 81.5, as compared with 82.2 a month earlier, 85.5 on Aug. 1.

1909, 76.8 on Aug. 1, 1908, and 82.6, the ten-year average. The proportion of last year's crop in farmers' hands was about 6.3 per cent, or 63,249,000 bushels, as compared with 3.3 per cent and 26,323,000 bushels last year, and with 5.8 per cent and 50,394,000 bushels, the average proportion for the past ten years.

The average condition of barley on August 1 was 70, as compared with 73.7 a month earlier, 85.4 on Aug. 1, 1909, 83.1 on Aug. 1, 1908, and 85.3, the ten-year average. About 7,263,000 bushels, or 4.3 per cent, of the 1909 crop was on farms on August 1.

The preliminary estimate of the area of rye harvested is 1.7 per cent less than last year. The preliminary estimate of yield per acre is 16.3 bushels, against 16.1 last year, 16.4 in 1908, and a ten-year average of 16 bushels. The indicated total production is 32,088,000 bushels, against 32,239,000 finally estimated in 1909 and 31,851,000 in 1908. The quality of the crop was 92.7, against 92.9 last year.

The area of buckwheat is about 816,000 acres, or 2.2 per cent (18,000 acres) less than last year. The condition of the crop on August 1 was 87.9, as compared with 86.4 last year, 89.4 two years ago, and 91.1, the ten-year average.

The average condition of white potatoes on August 1 was 75.8, as compared with 86.3 a month earlier, 85.8 on Aug. 1, 1909, 82.9 on Aug. 1, 1908, and a ten-year average of 86.

The average condition of tobacco on August 1 was 78.5, as compared with 85.3 a month earlier, 83.4 on Aug. 1, 1909, 85.8 on Aug. 1, 1908, and a ten-year average of 82.6.

The average condition of flax on August 1 was 51.7, as compared with 65 a month earlier, 92.7 on Aug. 1, 1909, 86.1 on Aug. 1, 1908, and 88.4, the ten-year average.

The preliminary estimate of the area of hay is 45,005,000 acres, or 1.6 per cent (739,000 acres) less than last year. The average condition of the hay crop on August 1 was 83, as compared with 80.2 a month earlier, 86.8 on Aug. 1, 1909, 92.1 on Aug. 1, 1908, and a ten-year average of approximately 87.2.

The average condition of other crops was as follows: rice, 87.6; pastures, 73; timothy, 82.4; alfalfa, 81.7; Kafir corn, 71.1; millet, 69.7; broom corn, 81.9; hemp, 79; hops, 88.2; peanuts, 85.8; apples, 47.8; peaches, 68.7; grapes, 77.2; pears, 61.3; watermelons, 73.7; cantaloupes, 74.7; sweet potatoes, 85.7; tomatoes, 83.3; cabbages, 83.4; onions, 85.9; sorghum, 82; sugar cane, 87.2; sugar beets, 85.2; blackberries, 65.3; raspberries, 64.1; oranges, 83; lemons, 88.7; beans, dry, 85.3; beans, Lima, 85.6.

In Massachusetts the average condition of corn was 88; of oats, 102; the yield per acre of rye was 18.3 bushels, and the acreage, compared with last year, 100; the acreage of buckwheat, compared with last year, was 100, and the condition 91; the acreage of tobacco was 85; of potatoes, 88; the acreage of hay, compared with last year, was 100, and its condition 99; the production of clover hay, compared with a full crop, was 100, and its quality 100; the condition of timothy was 99; of pastures, 85; of apples, 66; of peaches, 62; of grapes, 81; of pears, 76; of watermelons, 82; of cantaloupes, 85; of tomatoes, 87; of cabbages, 89; of onions, 89; of millet, 89; of blackberries, 89; of raspberries, 85; of beans for drying, 87; of Lima beans, 84.

TEMPERATURE AND RAINFALL FOR THE WHOLE COUNTRY.

[FROM UNITED STATES NATIONAL WEEKLY WEATHER BULLETIN.]

Week ending August 8. — During the early part of the week moderate temperatures prevailed in all districts east of the Rocky Mountains except in the southern portions of the Great Plains, where decidedly warm weather continued. Beginning with Wednesday, an area of high pressure moved from the Rocky Mountains and upper Missouri valley eastward, bringing decidedly cooler weather, extending eastward into the central valleys and the Atlantic coast region as the week advanced. The week closed with the temperature considerably below the normal in the Ohio and middle Mississippi valleys, and somewhat below over most of the remaining districts. No well-marked storm crossed the country during the week, but area of comparatively low barometer

prevailed in the Lake region and east Gulf States, accompanied with local showers and thunderstorms, and generally unsettled weather continued in much of the territory east of the Rocky Mountains until the middle of the week. The week closed with light rains and threatening weather prevailing over much of the eastern portion of the country.

Week ending August 15. — At the beginning of the week moderate summer temperatures were the rule in all portions of the United States. An area of moderately high barometric pressure moved from the Missouri valley eastward, with comparatively cool weather, during the following three or four days. This was followed by warmer weather, and the week closed with moderate temperatures in all districts except portions of the Mississippi and Ohio valleys and Lake region, where on Sunday they were comparatively high. Generally unsettled, cloudy weather prevailed at the beginning of the week over all districts east of the Rocky Mountains. This was followed by clear weather for several days, with threatening weather and showers over much of the country for the last three days of the week.

Week ending August 22. — The temperature at the beginning of the week was near the normal in all districts, but cooler weather overspread the northwestern States, and by Wednesday had advanced into the upper Missouri valley, with temperatures below 40° in portions of Montana, Wyoming and North Dakota. This cool area moved eastward, gradually overspreading the Mississippi and Ohio valleys, Lake region and Atlantic coast districts by the end of the week. At the beginning of the week unsettled weather prevailed over the districts east of the Rocky Mountains, and local and heavy showers occurred during Monday and Tuesday along the middle and north Atlantic coast. About the middle of the week local heavy rains occurred over portions of the South Atlantic States, at widely separated points in the southern Plains States and in the middle Mississippi valley.

Week ending August 29. — The week was one of marked temperature extremes, beginning with moderate temperatures

east of the Mississippi, and unusually warm weather in the middle and southern portions of the Great Plains and the southwest. This was followed by weather of decidedly wintry type, with freezing temperatures from southern Wyoming to the Canadian boundary, and changes elsewhere in the middle western Plains and central Rocky Mountain districts, within twenty-four hours, of from 30° to nearly 60° . Decidedly cool weather for August moved eastward, followed by warmer weather, and by the close of the week temperature conditions had returned to nearly the normal throughout the entire country. The precipitation of the week, as a rule, was confined to local showers at widely scattered points, with occasionally heavy rainfalls at widely separated points.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending August 8. — New England. Boston: There were general showers on Tuesday and Thursday, but little rain the rest of the week. Rainfall was excessive in parts of Maine and Vermont, but light to moderate elsewhere. Temperatures were seasonable. Rain is much needed in the southern portion.

Week ending August 15. — New England. Boston: The weather of the week was fair, except for general light to moderate showers on the 11th. More rain would be beneficial to nearly all parts of the section. Temperatures were seasonable, and sunshine was about the average amount.

Week ending August 22. — New England. Boston: Showers were general over the section on the 19th, and also occurred in the southeast portion on the 16th. The rainfall was generally as great as normal. Temperatures were moderate.

Week ending August 29. — New England. Boston: Very little or no rain fell during the week, except for copious showers in Rhode Island at the close of the week. A heavy rainfall would be of much benefit. Temperatures were moderate, and sunshine averaged about normal.

WEATHER OF AUGUST, 1910.

The month was about the normal in temperature, and much below the normal in rainfall. During the first ten days no rain fell except light showers, generally less than .1 inch in amount, on the 4th. On the 11th there were general showers and thunderstorms, with rainfall in amounts from .4 to .5 inch. On the 16th there were general light showers, and on the 19th showers occurred throughout the State, with amounts in the vicinity of $\frac{1}{2}$ inch. During the remainder of the month there was no rain except light local showers on the 26th and 29th. The average rainfall for the month over the State was generally about 1 inch, against a normal amount of about 4 inches.

There were no high temperatures during the month, although a somewhat high humidity on several dates with a moderately high temperature made oppressive conditions. The warmest periods of the month were from the 12th to the 15th, with maximum temperatures between 82° and 90° , and from the 22d to the 26th, with nearly the same temperatures. Except in these periods there were very few days with temperature above 80° . The amount of sunshine was somewhat above the average. The showers on the 11th and 19th, while sufficient to moisten the surface of the ground, were entirely inadequate to relieve the drought resulting from the deficient rainfall of July and further increased by the very small rainfall of August. There is great need of soaking rains to properly saturate the ground.

PUBLICATIONS.

For the benefit of our readers who may wish printed information on special crops or classes of crops, birds and insects, we have collected below the names and serial numbers of all bulletins, nature leaflets and reports now on hand. This complete list will be followed each month by a list of those publications, if any, issued within the month, and in the first number of each volume will be published a list of pamphlets issued during the winter. An occasional re-

vision of the complete list will be necessary from time to time, and will be made public as often as seems desirable.

Bulletins, nature leaflets, crop reports and reprints from the annual report will be sent to any address, postage prepaid. The expense of shipping copies of the annual reports is prohibitive, and must be borne by the applicant. The average weight, per volume, wrapped, is forty-four ounces. Where several years are desired, it will be found cheaper to order them shipped by express, charges to be collected from the person receiving them. Any of these publications can be obtained without expense by calling at this office, Room 136, State House, Boston, Mass. In ordering bulletins and nature leaflets, please indicate those desired by number, crop reports by month and year, annual reports by year, and reprints by title.

ANNUAL REPORTS.

1891.

1893 to 1899, inclusive.

1902 to 1905, inclusive.

1907.

1908.

BULLETINS OF MASSACHUSETTS AGRICULTURE.

No. 1. . . . Poultry Culture.

No. 2. . . . Orcharding.

No. 3. . . . Grasses and Forage Crops.

NATURE LEAFLETS.

No. 1. . . . Canker Worms.

No. 2. . . . Tent Caterpillars.

No. 3. . . . The Black-knot of the Plum and Cherry.

No. 4. . . . Spraying Mixtures for Insects and Plant Diseases.

No. 5. . . . The White-marked Tussock Moth.

No. 6. . . . The Spiny Elm Caterpillar.

No. 7. . . . Potato and Apple Seab.

No. 8. . . . Insects injuring Lawns.

No. 9. . . . Poison Ivy.

No. 10. . . . The Datanas.

No. 11. . . . Quince Rust.

No. 12. . . . Winter Birds at the Farm.

No. 13. . . . Peach Leaf-eurl.

No. 14,	Owl Friends.
No. 15,	Bird-houses.
No. 16,	Our Friend the Chickadee.
No. 17,	Bordeaux Mixture.
No. 18,	Plant Lice or Aphids.
No. 19,	Edible Weeds and Pot Herbs.
No. 20,	Massachusetts Weeds.
No. 21,	Potato Rots.
No. 22,	Hints for Out-door Bird Study. I. How to identify Birds.
No. 23,	Hints for Out-door Bird Study. II. How to find Birds.
No. 24,	Hints for Out-door Bird Study. III. How to approach Birds.
No. 25,	Hints for Out-door Bird Study. IV. How to attract Birds.
No. 26,	The Brown-tail Moth.
No. 27,	The Gypsy Moth.
No. 28,	The Garden Toad.
No. 29,	I. School Gardens.
No. 30,	II. Planting and Care of the School Garden.
No. 31,	III. Crops for the School Garden.
No. 32,	IV. Results of School Gardening.
No. 33,	Three Common Scale Insects.
No. 34,	The First Principles of Bee Keeping.
No. 35,	Window Gardening.
No. 36,	Hotbeds.
No. 37,	How to test Seeds.
No. 38,	How to Plant.
No. 39,	Milk: its Character and Value as a Food.
No. 40,	Care of Milk in the Home.
No. 41,	The European Elm-leaf Beetle.
No. 42,	Balanced Rations for Dairy Stock.
No. 43,	The Leopard Moth.
No. 44,	Root and Cleft Grafting.
No. 45,	Planting and Care of Trees.
No. 46,	How to Beautify the Home Grounds.

REPRINTS FROM ANNUAL REPORTS.

Education and Industry,	1905
Early Agricultural Education in Massachusetts,	1906
Greenhouse Pests and their Control,	1907
Hatching and Rearing Chicks by Natural Methods on the Farm,	1907

Artificial Hatching and Rearing of Chickens, as applied to “South Shore Roasters,”	1908
Some Sheep Topics for Massachusetts Farmers,	1908
Potato-growing Suggestions,	1908
Drainage,	1908

CROP REPORTS.

May, 1910, containing “Corn Selection for Seed and Show.”
 June, 1910, containing “Growing and Marketing Asparagus.”
 July, 1910, containing “Alfalfa as a Crop in Massachusetts.”

In the circular to correspondents, returnable August 24, the following questions were asked:—

1. What is the condition of Indian corn?
2. What is the prospect for rowen, compared with a normal crop?
3. What is the prospect for late potatoes, and have you noticed blight or rot?
4. How do the acreage and condition of tobacco compare with former years?
5. What is the prospect for apples, pears, peaches, grapes, quinces and cranberries?
6. What is the condition of pasturage in your vicinity?
7. How have oats and barley compared with former years?
8. What is the condition of celery and other late market-garden crops?

Returns were received from 133 correspondents, and from them the following summary has been prepared:—

INDIAN CORN.

Corn was greatly benefited by the light rains of August, and, in spite of the cool nights, made good progress. In the western and central sections considerable time is still needed for its development as grain, and unusually early frosts would unquestionably result in a considerable shortening of the crop. With killing frosts holding off until the 15th or 20th of September, nearly a normal crop should be secured; though a slight falling off from the normal seems inevitable in these sections, owing to the crippling of the crop on light

land by the long drought. In southeastern sections the reports generally indicate a crop considerably above the normal, many correspondents saying that it promises to be the best yield of Indian corn for years.

ROWEN.

The second crop of hay has suffered in most sections from the lack of rain following the cutting of the first crop, and there will be very little rowen on any but new seeded fields. Even on such fields it will be a light yield on the lighter soils, and where there was any lack of fertility. Some improvement was noted with the rains of the month, but nothing like sufficient to bring the crop near the normal, even though it should be allowed to stand to an unusually late date.

POTATOES.

The crop of early potatoes is generally reported as much below the normal, owing to the effects of the drought. Late potatoes look well, the vines being in unusually good condition in many sections, and still green and growing. A good crop is looked for, almost without exception. A few cases of rot are reported, mainly from Bristol County, and some blight and rust; but not enough damage from the latter causes is reported to make it likely that the crop will be materially shortened for the State as a whole.

TOBACCO.

The acreage of tobacco in the Connecticut valley is reported to be about the same as for the past few years, no material increases or decreases being reported. The crop was in poor condition at the beginning of the month, short and backward, owing to drought, but responded finely to the rains, and a crop very close to the normal was indicated from the returns. Cutting had begun in some sections at time of making returns, with excellent weather for harvesting and curing.

FRUITS.

The returns still indicate a light crop of apples, especially winter varieties. There are many complaints of excessive dropping, due probably to the drought, and the fruit is generally small for the time of year. With seasonable rains and a fairly long season much of this difficulty is likely to be overcome. More trees have been sprayed this year than ever before, and the quality of the crop, aside from size, bids fair to be much in excess of that of any previous year. Pears are a fair crop, but are little grown, except for home use, in most sections. Peaches are rather above the average for the State as a whole. The number of commercial peach orchards is nevertheless smaller than formerly, owing to trouble from winter-killing, and poor crops because of frost damage in past years, so that a considerable number of growers have gone out of the business. Grapes will give an average crop, and quinces, though little grown, promise fairly well. The cranberry crop will, from present indications, fall somewhat below the average, there being no reports of unusually good yields, and most of them being for "fair" or "average" crops, with several below the average.

PASTURAGE.

Feed in pastures started the season well, suffered from the drought in July, and improved with the rains of the past month. It is now certainly in average condition for the latter part of August, for the State as a whole, though feeding at the barns has begun in some localities, and pastures are reported as "short," "dry" or "burnt" in others.

OATS AND BARLEY.

Oats are an average crop where grown for grain, though a little short in stalk. For hay and green feed they have not yielded quite as well as common. Barley is little grown except for a late forage crop, almost not at all for grain, and in the former capacity promises well. It is not hayed to anything like the same extent as oats.

LATE MARKET-GARDEN CROPS.

Celery seems to have suffered considerably from drought, and only a fair crop was indicated at the time of making returns. Other late market-garden crops were backward, but growing well since the rains, and promising good yields in the future. Some fears were expressed that squashes might be shortened by early frosts. From the principal market-garden sections come reports that crops as a rule have been light, but that prices have been good.

NOTES OF CORRESPONDENTS.

(Returned to us August 24.)

BERKSHIRE COUNTY.

New Marlborough (E. W. RHOADES). — Indian corn has made a good growth, and is fairly well along. Rowen has greatly improved during the past few days, with good prospects for a fair crop. Potatoes look well generally, except that blight has appeared on a few fields. Apples will be a light crop; pears and grapes promise well. Pastures are holding out well since the recent rains. Oats were a fine crop. Sweet corn, cabbages, turnips, etc., are doing well. Considerable buckwheat is raised in this town, and has made a heavy growth and is now ready to fill.

Stockbridge (F. A. PALMER). — Corn is rather late, but is doing nicely now, and with good weather in September will give a good crop. Rowen will be 20 per cent below the normal. The prospect is very good for late potatoes, with no sign of blight or rot. Apples are 50 per cent of a normal yield and pears 90 per cent. Pasturage is in very good condition, owing to the recent rains. Oats were an extra fine crop. Late market-garden crops are doing nicely, and bid fair to yield well. Apple trees are sadly neglected with us, and the crop is light and of poor quality.

Becket (Wm. H. Snow). — Indian corn is very backward. Rowen will be a normal crop. Potatoes promise well, with no blight or rot as yet. Pears and apples promise good yields. Pasturage is getting dry. Oats and barley were full average crops. Celery and other late market-garden crops look finely. Cucumbers and squashes are very backward, owing to the cold, wet spring, late planting and dry weather in July and August.

Lenox (HORATIO H. SEARS). — Corn is rather late, but promises well. Clover rowen will be a good crop. Potatoes promise well, with neither blight nor rot; but flea beetles have made some fields look brown. There will be a small to medium apple crop; no other fruits raised for market. Many farmers are feeding green corn to help out the pastures. A crop of oats above the average has been harvested; not much barley raised. The dry weather has hurt garden crops somewhat, especially on dry land.

Washington (E. H. EAMES). — Corn promises well, better than last year. Rowen is about an average crop. The prospect for potatoes is good, with no blight or rot as yet. Apples are half a crop, as are other fruits. Oats are a good crop; barley not grown. Pastures are in good condition. Garden crops are only grown for home use, and are in good condition for that purpose.

Peru (F. G. CREAMER). — Indian corn looks well. There will be very little rowen, as the rain came too late. Potatoes look well, with no blight or rot as yet. There will be about half a normal crop of apples. Pasturage is in fair condition. Oats and barley are above average crops.

Dalton (WESLEY B. BARTON). — Indian corn is in fair condition. Rowen will be 70 per cent of a full crop. Late potatoes promise well, and there is little blight or rot at present. Pasturage is getting short. Oats and barley were each about a three-fourths crop. Celery is late, and the weather was too dry at time of setting for best results. Cows are very scarce, and the milk yield light.

Savoy (WILLIS W. BURNETT). — Corn is looking well, but is unusually backward. There will be very little rowen, on account of drought. Potatoes are looking finely, and very little drought has been noticed. The prospect for fruit is not at all flattering. Pastures are dry and short for August. Oats and barley were fully average crops, compared with other years. Garden crops are little raised for market in this locality. As a general rule, crops are looking fairly well, and with a fairly long season should do well.

New Ashford (WALTER P. SMITH). — Indian corn is still two weeks late, owing to cold nights. There will be quite a good deal of clover rowen. No rot has been noticed on potatoes, but the leaves are turning brown. Pears promise an average yield; apples scarce; other crops not grown. Pasturage has improved since the rains. No oats have been threshed, but a good yield is promised. No market-garden crops are raised here.

FRANKLIN COUNTY.

Rowe (HENRY D. WRIGHT). — Indian corn is not up to the average in condition. Rowen will be less than a normal crop. The prospect is good for late potatoes, with no blight or rot as yet. Apples are an average crop. Pasturage is in better condition than last year. Oats and barley are looking well, and promise better than average yields.

Colrain (W. H. DAVENPORT). — Corn is doing well, and promises a good crop. Rowen is backward, owing to lack of rain. Potato vines look well, but the dry weather must affect the yield; no blight or rot as yet. The apple crop promises well. Pasturage is short, owing to lack of rain. Oats and barley are little raised.

Bernardston (R. H. CUSHMAN). — The corn crop is uneven, owing to drought. Dry weather will be the cause of a light rowen crop. Late

potatoes promise much better results than were secured from early ones. Apples have dropped badly, and will be a light crop; other fruits fair. Pasturage is badly dried up, and rain is also needed for the water supply. The oat acreage is large, but the yield is not heavy. But little is done along market-garden lines. Less than the usual amount of seeding has been done up to date.

Buckland (EUGENE D. GRISWOLD). — Indian corn is looking well. There will be a fair crop of rowen, perhaps a bit below the average. The prospect is good for late potatoes, with neither blight nor rot as yet. Acreage of tobacco about average, and condition good. Apples will be less than an average crop; other fruits about as usual. Pasturage is in good condition. About the usual amount of oats and barley are raised, and they are of good quality. Late market-garden crops are in good condition.

Shelburne (W. J. PURRINGTON). — Corn is looking well, but is two weeks later than usual. The prospect for rowen is very poor, owing to dry weather. There will be a very light crop of late potatoes. The apple crop promises to be very good. Pastures are very short, because of dry weather. No oats or barley are grown in this town.

Whately (C. L. CRAFTS). — Indian corn is growing rapidly, and will give a better crop than was expected. There will be about one-fourth of a normal yield of rowen. Some fields of late potatoes will give excellent yields; no blight or rot. There is about the usual acreage of tobacco, and the crop is one of the finest ever grown. There will be fair yields of apples, pears, peaches, grapes and quinces. The dry weather affected pastures badly, and feed is in poor condition. Oats are not as good crops as usual. Late market-garden crops are below the usual average. Tobacco harvesting is now going on, and good help is scarce.

Sunderland (GEO. P. SMITH). — Corn is looking well now, and promises a normal crop. Rowen is good on new seeding on rich, moist soil; otherwise, a failure. Late potatoes look well, with no blight or rot as yet. Tobacco is much improved since the rains, and promises better than an average crop. Apples will be a light yield; pears and grapes fair. Feed in pastures is rather short, but fresh and good. Oats and barley are little grown. Late market-garden crops are good, but mature later than in some years. The onion crop is better than promised a month ago, but not as large a yield as expected; 50 cents per bushel is offered for future delivery.

Northfield (T. R. CALLENDER). — Indian corn is looking well, except on dry ground, and promises an average crop. Rowen will give about two-thirds of a normal crop. The prospect is poor for late potatoes; very little blight, but some leaf burn. There is about the usual acreage of tobacco, and the crop promises fairly well. Fruit is below the average. Pasturage is badly in need of rain. Late market-garden crops are but little grown here.

New Salem (DANIEL BALLARD). — Indian corn promises a fair average crop. Rowen will be a little less than a normal yield. The prospect for potatoes is good, and I have noticed neither blight nor rot. There will be fair crops of apples and pears, and some peaches and grapes. Pastures are rather short and dry. Oats and barley compare favorably with the normal, and there are some heavy yields of oats. Garden crops are looking well where grown for home use; not much grown for the market.

HAMPSHIRE COUNTY.

Ware (J. H. FLETCHER). — Corn is looking well, but is a little late. The prospect for rowen is not as good as some years. Potatoes are looking very well, and I have noticed neither blight nor rot. The prospect for apples is not very good, and there will not be many peaches. The pasturage is in good condition. Oats and barley are about average crops. Late market-garden crops are looking well at present.

Enfield (D. O. CHICKERING). — Indian corn is looking unusually well, but will be late in maturing. The prospect is good for a normal crop of rowen. The crop of late potatoes will be light; neither blight nor rot has appeared as yet. There will be a moderate crop of fruit. Pasturage is about in the usual condition for the time of year. Oats and barley are average yields. Garden crops are not grown for market.

Pelham (JOHN KNIGHT). — Corn is looking well. Rowen is not up to the average. Late potatoes promise an average yield. There will be a fair crop of apples and a good crop of peaches. Pasturage is in poor condition. Oats are a good crop; barley not much grown. Late garden crops are in good condition. The dry weather injured our pastures and the rowen crop.

Hadley (H. C. RUSSELL). — Late rains have changed the condition of all crops from the July condition. Indian corn promises a good crop. There will be a fair crop of rowen. Blight has attacked most of the potato fields. Tobacco has improved greatly in the last three weeks, and the crop will be fully up to the average of the last five years. There will be a fair crop of apples. Pastures are improving over July conditions.

Hatfield (THADDEUS GRAVES). — Indian corn promises a normal crop. Since the late rains rowen promises well. Late potatoes promise a three-fourths crop; no blight or rot as yet. There is the usual acreage of tobacco, and it is much improved since the rains. There will be half a crop of most kinds of fruit. Pasturage is in fairly good condition. Oats and barley are little raised. Celery and other late market-garden crops are backward.

Easthampton (W.M. C. CLAPP). — Corn is improving every day, and if there are no early frosts will be a good crop. There will be some

rowen, but hardly a normal crop. Late potatoes are still growing; there is some blight, but no rot as yet. Tobacco is reported better than last year. There will be a fair crop of apples, pears and grapes; other fruits little grown. Rains have helped pasturage materially. Oats are a good crop; barley not much raised. Celery is little grown. Late cabbages are growing well.

Southampton (C. B. LYMAN). — Corn is looking fairly well, though the drought will lessen the yield of grain. The prospect for rowen is very poor. Late potatoes are very uneven, some fields looking very well and others the reverse. Tobacco looked poorly three weeks ago, but has taken a new lease of life and is turning out well; cutting has commenced, acreage about as usual. Apples will be a light crop; pears plenty; peaches scarce; grapes fair. Pastures very short of feed. Oats were never better, mostly cut for hay. All crops have improved greatly since the rains of three weeks ago.

Williamsburg (F. C. RICHARDS). — Indian corn is looking finely, but will be late in ripening, and early frosts would injure it severely. The weather has been too dry for rowen, except in a few well-favored fields. Late potatoes are looking well; little blight and no rot as yet. Apples promise half a crop; pears and peaches good. Feed is getting very short in pastures. There will be a short growth of oats.

Goshen (GEORGE L. BARRUS). — Corn is somewhat backward, but will ripen with time. The rowen crop promises to be better than the average. Late potatoes are looking well, but some blight is seen. There will be about half yields of all fruits. Pasturage is in good condition, showers and short rains having kept it green.

HAMPDEN COUNTY.

Blandford (ENOS W. BOISE). — Corn has of late made a good growth, but is still backward and not up to the average. Rowen is not over half a crop. The rains have helped late potatoes, which promise well, with no blight. Apples and pears are from one-half to three-fourths of the normal. Pastures are dried up, and stock is being fed from the barn. Oats and barley are fully up to the average. Garden crops are late, but are doing well since the recent rains.

Agawam (J. G. BURT). — Indian corn promises a good crop. The prospect is for only a light crop of rowen. Potatoes promise a light yield; no blight or rot as yet. The acreage of tobacco is about the same as usual, and there will be a good crop. Apples and peaches will give light crops; other fruits good. Pasturage is pretty short. Oats and barley are better crops than in former years. Late market-garden crops are in good condition.

West Springfield (N. T. SMITH). — Corn is growing well, but will require a late fall to mature well. Very little rowen will be cut, and that late; grass is now growing well, and some have turned stock into

their mowing lands. Hope is entertained for improvement in the potato crop; considerable blight has appeared, but no rot as yet. Tobacco was formerly raised here in large quantities, but none is now raised in town. Apples are generally a very short crop, with a few exceptional cases of fine yield, with good quality; pears plenty; grapes good; other fruits light. Feed in pastures is very short, but is growing since the drought was broken. Oats and barley are mostly cut for hay or fed green, and have made good growths. Celery and other late market-garden crops are doing well at present, but the cabbage crop is short. Early potatoes were nearly a failure.

Chicopee (E. L. SHAW). — Indian corn is doing finely now. Rowen seems likely to be about a normal crop. Late potatoes are still green and growing, with no blight or rot. Apples are very few; pears plenty; peaches few; grapes plenty. Pasturage is in good condition. Oats are a good crop, better than usual. Celery and other late market-garden crops generally promise well.

Ludlow (CHAS. B. BENNETT). — Corn is in very good condition, but is ten days late. Rowen will give about one-fourth of a normal crop. Early potatoes were a failure, owing to drought; but the late ones are holding out well, and the crop will be large if they do not blight. Apples and pears promise fair crops; no peaches or quinces; grapes good. Pasturage is in very good condition. Oats are a better crop than usual; no barley grown. There is a large acreage of buckwheat, and the yield will be large. Onions are a light crop. Cabbages, celery and turnips will give good yields. The month of August has been perfect for the growing of all crops.

East Longmeadow (JOHN L. DAVIS). — Indian corn is above the normal in condition. Rowen is a normal crop, and early cut pieces are above the normal. Early planted late potatoes will give a poor yield, but very late planted ones promise well; there is no blight or rot, but a good deal of leaf burn. Apples and pears are excellent; there will be some grapes; no peaches, quinces or cranberries. Pasturage is in excellent condition. Oats are a heavy yield; no barley grown. Celery should be excellent; also melons, turnips and vine crops.

Wilbraham (H. M. BLISS). — Indian corn is about 85 per cent of the normal in condition. Rowen will give half a crop. Early potatoes were a failure, but the late crops promise much better yields; no blight or rot. Apples are 70 in condition; pears, 90; peaches, 85; grapes, 95; quinces, 60; cranberries, 50. Pasturage is 70 per cent of the normal in condition. Oats and barley were good crops. Celery and other late market-garden crops promise fairly well.

Palmer (O. P. ALLEN). — Since the recent rains corn has improved rapidly and is looking well. Rowen is not quite up to the normal in condition. The prospect for late potatoes is very good, with neither blight nor rot. Fruit promises very good yields of good quality.

Feed in pastures is not as good as usual, but has improved since the recent rains. Oats and barley have compared well with former years. Little celery is raised here; other market-garden crops promise well.

WORCESTER COUNTY.

Charlton (LOREN E. STEVENS). — The prospects are bright for a good crop of corn. The rains came too late to help rowen. Late potatoes are looking well, with no blight or rot. There will be few apples, peaches or grapes. The dry weather has affected pastures badly. There were average crops of oats and barley. The recent rains have helped late garden crops. There is no celery raised in this section, except for home use.

North Brookfield (JOHN H. LANE). — Indian corn is late, but is growing rapidly. Very little rowen will be cut, as the weather has been very dry. Late potatoes will do well where planted late. Apples are 25 per cent of the normal; pears, 20; grapes, 50. Much pastureage has turned brown, but it has improved since the rains. Oats were a full crop. The early drought was to much for early potatoes.

Dana (LYMAN RANDALL). — Corn is looking well, but is two weeks late. There will be some rowen, but not half a crop. Late potatoes promise a good crop, with no blight or rot as yet. There will be about half a crop of apples, pears and peaches; other fruits light. Pastures are short, owing to dry weather. Oats are an average crop; no barley raised. Celery and other late market-garden crops are far below the average.

Petersham (B. W. SPOONER). — Indian corn suffered severely from a hail storm early in the month, and has not recovered. The prospect for the rowen crop is much better than early in the month. No rot has appeared on potatoes, but some fields have blighted. Apples and pears are plenty; peaches and grapes very light. Pasturage is in very good condition, the rains having kept it quite fresh. Oats and barley were not much sown this year. On August 2 we had the worst storm ever known here, with lightning, hail and high winds, which damaged all growing crops and completely destroyed some of them.

Templeton (LUCIEN GOVE). — Indian corn is thrifty, though somewhat late and rather uneven. Rowen is not up to a normal yield, though the recent rains have improved its condition. The potato crop will be as good as last year; blight has not appeared to any extent as yet. Apples are 70 per cent of a full crop; pears, 60; grapes, 70; no peaches or quincees. Pastures are in fair condition, better than a month ago. Oats and barley are full normal crops. Celery is not raised; other market-garden crops are looking well, though somewhat late. The severe drought had a serious effect on most cultivated crops. Early potatoes are nearly a failure.

Fitchburg (Dr. JABEZ FISHER). — Corn is looking unusually well.

With timely rains there is yet time for an average crop of rowen. Potatoes are backward, but thrifty, with no blight as yet. Apples, pears and grapes have improved, and promise 50, 60 and 85 per cent of a full crop respectively. There is much less trouble from fungous diseases than usual, and fewer insects.

Sterling (HENRY S. SAWYER). — Indian corn is looking well. There will be a normal crop of rowen. Potatoes are somewhat injured by drought, with no signs of rot. Apples, pears and grapes promise good yields. The pastures are pretty dry on the hills, and feed is short. There was a normal crop of oats. Celery and other late market-garden crops are somewhat injured by drought.

Bolton (H. F. HAYNES). — Indian corn is late, but looks well. Rowen is a little below the average. There is no blight on potatoes, but the crop promises to be light. Apples are half a crop; other fruit poor. Pasturage is in very good condition, but perhaps not quite normal. Oats and barley are all cut for green feed. Celery and other late market-garden crops are in very good condition. It has been as dry a season as I have ever known, and grass was the only crop that was really good.

Worcester (H. R. KINNEY). — On light land corn was damaged by drought, but is improving now. Rowen will be light, except on heavy land. There is some potato blight, but no rot as yet. Apples and pears are good crops, and grapes fair. Pastures are better than usual now. Oats were a good crop; barley not grown here. Celery and other late market-garden crops are rather backward, but growing fast. Early potatoes are reported a very light crop, but late ones are looking well. Most vegetables have given light yields, but have sold well.

Shrewsbury (FRED J. REED). — Indian corn is in fairly good condition. Very little rowen has been cut as yet, and the crop will be very light. Late potatoes are very poor, with some blight. There are few fall apples, and no pears or peaches. Pastures improved since the rains, but are still quite poor. Oats and barley were little raised this year. Rain did a little good to late market-garden crops.

Milford (JOHN J. O'SULLIVAN). — Indian corn is in fair condition. Rowen will give a medium crop. Late potatoes have suffered from drought, and blight is just beginning to show. The prospect is fair for apples, and poor for other fruits. Pasturage is very dry. Oats and barley are about average crops. Celery and other late market-garden crops are little raised.

Mendon (J. J. NUTTER). — Indian corn is in poor condition. Rowen is a poor crop. Potatoes are in poor condition, and blight begins to appear. Apples are looking very well in this section, but need rain. Pasturage is in poor condition. Oats and barley are but little grown in this vicinity. Celery and other late market-garden crops are little grown. Rain is badly needed.

MIDDLESEX COUNTY.

Hopkinton (W. V. THOMPSON). — Some fields of corn are nearly a failure from drought, but the crop as a whole is very good, considering the dry weather. There is no prospect of rowen. Late potatoes look finely. Apples look well, but are dropping badly; pears good; no peaches; grapes fairly good. Pastures are badly dried up, and are just starting up again. Early seeded oats and barley did well. No market-garden crops are raised in this locality. We are still trying to make a success of alfalfa as a hay crop, and it seems to be doing well now.

Marlborough (E. D. HOWE). — Indian corn germinated poorly, but promises about 80 per cent of a normal crop. There will be no rowen at all. Apples are 45 per cent of the normal; pears, 60; peaches, 25; grapes, 80; quinces, 75. Pasturage is in very poor condition. Oats and barley are raised only for forage.

Sudbury (EDGAR W. GOODNOW). — Indian corn is looking well. The prospect for rowen is not encouraging, and the crop will be light. Late potatoes are still growing, with no signs of blight. The prospect for apples, pears and grapes is good. Pasturage is short, owing to the dry season. The oat and barley crops will be about normal. There promises to be a good crop of celery, and other late market-garden crops as well.

Stow (GEO. W. BRADLEY). — Corn is looking very well, but is backward. There will be about half an average crop of rowen. Late potatoes are looking quite well, with no signs of rot. Apples good; pears fair; no peaches; other fruits medium. Pastures are in very fair condition, considering the drought. Oats have turned out well; but little barley raised.

Westford (J. W. FLETCHER). — Indian corn is doing well since the rains. There is a good crop of rowen. The prospect is good for late potatoes; no blight or rot as yet. The prospect is good for fruit of all kinds. Pasturage is in good condition.

Dunstable (A. J. GILSON). — Indian corn is in fair condition, but a little backward. Rowen, except that on moist, rich land, is below the normal. Potatoes have suffered very generally from lack of rain. The apple crop is very uneven, with the prospect of a light crop as a whole, and there is no other fruit worth mentioning. Pastures are very dry, and the feed in them is very short. Oats and barley raised for grain compare well with former years. The dry weather has affected all garden crops.

Chelmsford (W. B. BULLOCK). — Indian corn is in good condition. Rowen will be below a normal crop. Potatoes will be a small crop in this section. Apples, pears, grapes and quinces will give good crops. Pastures are looking better since the rains. Oats and barley

are above the normal in condition. Celery and late market-garden crops are looking well.

Billerica (E. F. DICKINSON). — Corn is looking well since the recent rains. There will be about a third of a normal crop of rowen. The promise is for a medium crop of late potatoes; no blight or rot. Apples are a two-thirds crop; pears a full crop; peaches a small crop; quinces light. Pasturage is in better condition than a month ago, but barn feeding is general here in summer. Oats and barley are normal crops. Celery and other late market-garden crops are hardly up to the average. Showers during the past month have done much for all vegetation.

Lexington (HOWARD M. MUNROE). — Corn on moist soils looking well, but on light, dry lands suffered from drought. There will be very little rowen cut except on moist, low land. Late planted potatoes look better than the early; no blight or rot as yet. Early apples are more than a full crop, but of small size, owing to dry weather; late apples not as good. Pasturage is in very poor condition. Oats and barley are fully up to the average of former years. Late celery is very small, owing to dry weather; also late cabbage and cauliflower. The dry rot is causing quite a loss to the tomato crop. Squashes promise only a light crop.

Winchester (S. S. SYMMES). — Indian corn is not raised here. There will be very little rowen. There is no blight or rot on potatoes, but the tubers are very small. Pears are a good crop; all other fruit light. Pasturage is all dried up. Oats and barley are not raised here. The ground is dry so deep that plants and trees do not get enough moisture. The light rains have only laid the dust. Celery is very small.

Newton (G. L. MARCY). — Corn is a good crop, but is little grown. Rowen is below the average. There are few potatoes grown here. The prospect is good for apples, pears, peaches, grapes and quinces. Pasturage is in poor condition. Oats and barley are good crops.

ESSEX COUNTY.

Salisbury (WESLEY PETTENGILL). — Corn is looking well, except on very high ground. Rowen will be a very light crop. Late potatoes will give a fair but not a large crop; no blight or rot. Winter apples will be a light crop; fall apples good; pears good; peaches very light; grapes light; cranberries fair. Pastures are in poor condition. It is rather dry for most garden crops.

Methuen (FREDERICK A. RUSSELL). — Indian corn is about an average crop. Rowen is good where the first crop was cut early. Late potatoes are rather below the average, with no blight or rot. Apples and pears promise a heavy crop where trees have been sprayed. Pastures have improved with the recent rains. Oats and barley are

good crops. Celery is good where irrigated; other late market-garden crops are looking fairly well.

Newbury (GEORGE W. ADAMS). — Indian corn is in very good condition. There will be a fair average crop of rowen. Late potatoes are a light crop, with no blight or rot. Apples are a fair crop; pears, 50 per cent of a full crop; peaches, 60 per cent; grapes a fair crop. Pasturage is good for the time of year, but is always short in August. Oats and barley are a little backward and the straw is short, but are fair crops. Celery and other late market-garden crops are coming on well.

Groveland (A. S. LONGFELLOW). — Indian corn is looking very well. There is quite a good crop of rowen, but less than usual. The prospect is good for late potatoes, with no blight or rot as yet. There will be half a crop of apples, lots of pears and some peaches. Pasturage in this section is always poor after July 1. Oats and barley are full crops. Garden crops are looking well, because of frequent rains.

Andover (MILo H. GOULD). — Corn is looking well, but is backward. Rowen is only half a normal crop, on account of dry weather. Late potatoes are looking well, with no blight or rot. Apples are a fine crop; pears good; peaches light; cranberries looking well, except where hurt by late frost. Pastures are rather dry. Oats and barley are average crops. Celery and other late market-garden crops are looking well.

Topsfield (B. P. PIKE). — Indian corn promises an average crop. Rowen is a very light crop. There is no blight on potatoes, and they are looking well. There will be light yields of all fruits. Pasturage is in poor condition. Oats and barley are less than average crops. Celery and other late market-garden crops are fairly good.

NORFOLK COUNTY.

Cohasset (ELLERY C. BATES). — Indian corn is in good condition. Rowen is a good crop. Late potatoes promise well, with no blight or rot as yet. The prospect is good for fruit of all kinds. Pasturage is in poor condition. Celery and other late market-garden crops promise well. English sparrows have helped the farmers this year by eating large numbers of cut worms.

Stoughton (CHARLES F. CURTIS). — About half a crop of corn is now indicated. The rowen crop is a complete failure. The prospect for late potatoes is only fair, and blight is quite prevalent. Apples promise half a crop; pears, a three-fourths crop; peaches, one-third; grapes, three-fourths; quinces, one-third; cranberries one-half. Pastures are very poor, owing to lack of rain. Oats are fully an average crop. Most late market-garden crops are badly in need of rain. Five of the leading dairymen did not raise any corn for the silo, owing to the high cost of labor for harvesting last year.

Norwood (F. A. FALES). — Indian corn is looking well, but is two weeks late. Rowen will be a light crop. Late potatoes are looking well, with no blight or rot as yet. Apples are dropping badly, owing to the dry weather; pears will be a light crop; grapes and cranberries are looking well. Pastures are drying up badly. Oats were a good crop; barley rather light. Very little celery is raised here; other late market-garden crops are looking well.

Millis (E. F. RICHARDSON). — There is an excellent prospect of a good crop of corn. There will be hardly any rowen, owing to drought. There is no blight or rot as yet on potatoes, and a fair crop is promised. Apples, pears and grapes promise good crops; other fruits poor. Pastures are very dry. Oats and barley are about average crops. Celery and other late market-garden crops are in fair condition.

Walpole (EDWARD L. SHEPARD). — Indian corn is in fair condition, but needs rain. There is a light crop of rowen, on account of the dry weather. Late potatoes are looking well, with no blight or rot to speak of. Fruit will be below the normal in yield. Pasturage is about gone for this season. Oats and barley are about normal in yield and quality. Celery and other late market-garden crops are rather backward, owing to want of rain.

Foxborough (WILLIAM E. PERKINS). — Indian corn is backward for the time of year. The lack of rain will cut short the rowen crop one-half, if not more. Potatoes on high land will be a light crop; there is some blight, but no rot as yet. Fruits of all kinds will give light crops. Pasturage is in good condition. Oats and barley are normal crops.

BRISTOL COUNTY.

Easton (W.M. N. HOWARD). — Indian corn promises a good crop. Rowen is probably a two-thirds crop, as the lowlands are looking well. Potatoes promise a good crop, but many fields are blighting, and there is some rot in those now digging. Apples and pears are fair crops; cranberries light; peaches, grapes and quinces not much grown. Pasturage is good on lowlands and poor on uplands. Oats have been a good crop, but the acreage is small. Celery and squashes are late, and early frosts would cut the squash crop badly; the vines look well.

Attleborough (ISAAC ALGER). — Corn promises more than an average crop. The prospect for rowen is very poor. Late potatoes promise a fair crop. There will be very small crops of apples, pears, peaches, grapes and cranberries. Pasturage is in fair condition for the time of year. Oats and barley are full average crops. Celery and other late market-garden crops are in fair condition. The June frost destroyed the cranberry crop in this section.

Raynham (J. R. LAWRENCE). — Corn is in splendid shape, and a good crop of both ears and fodder is promised. Very few fields promise any rowen. Potatoes are uneven, but light as a rule; both blight

and rot are present. Apples poor; pears good, but rotting; peaches hurt by late frosts, and very few. Pastures are badly in need of rain. Oats and barley are average crops. Celery and other late market-garden crops are in fair condition. Elm trees have suffered severely from the beetle, and locust leaves present the same appearance, while oak leaves are off color.

Dighton (HOWARD C. BRIGGS). — Indian corn is in good condition. There will be more than an average crop of rowen. Late potatoes promise an average crop, but with some blight and rot. There will be about half crops for all kinds of fruit. Pasturage is in good condition. Oats and barley are average crops. Celery and other late market-garden crops are in better than average condition. Prices for nearly all produce are lower than usual.

Swansea (F. G. ARNOLD). — There is a splendid growth of grain and fodder on corn. Rowen is about a normal crop. Late potatoes look well, with neither blight nor rot. Apples are a light crop; pears fair; peaches good; grapes and quinces very poor. Pasturage was never better at this season of the year. Oats are very heavy, both for grain and straw. Celery and other late market-garden crops are in good condition.

Westport (ALBERT S. SHERMAN). — The corn crop never looked better. The rowen crop is being secured, and is a good yield. Potatoes promise well; no blight or rot as yet. Apples and peaches are scarce; pears and grapes plenty; no quinces or cranberries. Pasturage was never in better condition in the month of August. Oats are a good crop; no barley raised. Late garden crops, especially cabbage and turnips are in fine condition. Plenty of rain has caused all vegetation to flourish, and there is plenty of feed for cows, causing a good flow of milk.

PLYMOUTH COUNTY.

Norwell (HENRY A. TURNER). — Indian corn is in good condition. There is hardly a normal crop of rowen. The prospect is good for late potatoes; no blight or rot as yet. Apples are very uneven; pears scarce; grapes and cranberries good. Pastures are in better condition than is usual at this time of year. Celery is not much raised. Turnips are looking well.

Brockton (DAVIS COPELAND). — Indian corn is looking well. There will be from 50 to 75 per cent of a normal crop of rowen. Late potatoes are looking well, with no blight or rot as yet. Apples and pears are good crops; also grapes on some vines. Pasturage is very short. Oats and barley are not grown except for forage. Celery and other late market-garden crops are in fairly good condition.

Plympton (WINTHROP FILLEBROWN). — Corn is looking very well, though rather uneven. The rowen crop will be small. Blight and rot are not prevalent on potatoes, and there is prospect of a good crop.

Apples are deficient; cranberries will give a good crop; other fruits below normal. Pasturage is holding out well. Oats and barley have done well. Market-garden crops are doing well, notwithstanding the deficiency in rainfall, as the better methods of cultivation seem to produce good crops.

Kingston (GEORGE L. CHURCHILL). — Indian corn is not up to the standard of last year. There will be a small crop of rowen. Potatoes are light, with some blight. There will be a fair crop of cranberries, but not much fruit of any kind. Pasturage is rather short. Oats and barley are not much grown. Celery and other late market-garden crops are in very fair condition. It has been so hot and dry that vegetation has been unable to start and grow as it should have done.

Carver (J. A. VAUGHAN). — Indian corn is in good condition. There will be a fair crop of rowen. The prospect is good for late potatoes; there is little blight and no rot. There will be but few apples and pears; cranberry picking has just begun, and an average crop may be expected. Celery and other late market-garden crops are in good condition.

Lakeville (NATHANIEL G. STAPLES). — Corn is in very good condition. Rowen will be a fair crop. The prospect is good for late potatoes; have not heard of any blight or rot as yet. Apples are scarce; pears, grapes, quinces and cranberries fair. Pasturage is rather dry. Oats are above the average. Celery and other late market-garden crops are in fair condition.

Mattapoisett (E. C. STETSON). — Indian corn is in very good condition. Rowen is a little below the normal in yield. The prospect is pretty good for late potatoes, although there is some blight and rot. There are few apples; pears, peaches, grapes and quinces poor; cranberries medium. Pastures are in quite good condition for the time of year. Oats and barley were fully up to the average. Celery and other late market-garden crops are fully up to the average.

BARNSTABLE COUNTY.

Mashpee (W. F. HAMMOND). — Indian corn is looking well, above the average. There will be an average crop of rowen. Potatoes are looking very well, with little blight and rot as yet. Apples, pears, peaches and quinces are nearly total failures; cranberries half a crop. Pasturage is in better than average condition. Oats and barley are above the average. Late garden crops bid fair to give good yields.

Barnstable (JOHN BURSLEY). — Corn is growing very rapidly, and is heavy in stalk. The prospect for rowen is very good, as copious rains keep everything growing. Late potatoes promise a very fair crop, with no blight or rot as yet. Apples and peaches will be very light crops; grapes good; pears and cranberries only light to moderate crops. Pasturage is in very good condition for the time of year. Oats

were a very good crop; barley not grown. Cape turnips are looking well. Indications are that the cranberry crop will be below the average.

Dennis (JOSHUA CROWELL). — Indian corn is in excellent condition. The prospect for the rowen crop is better than usual. Late potatoes are in good condition, with no blight or rot as yet. Apples are scarce; pears fair; cranberries a two-thirds crop. Pasturage is in very good condition. Oats and barley are but little grown. Turnips, carrots, beets, etc., are looking finely.

Brewster (THOMAS D. SEARS). — Indian corn is in very good condition. The crop of rowen will be above the normal. The prospect for late potatoes is good, with no sign of blight or rot as yet. The apple crop is below the normal; there are some pears, peaches and grapes, and an average crop of cranberries. The crops of oats and barley compare favorably with former years. Late market-garden crops are looking well.

Truro (JOHN B. DYER). — Indian corn is in better than average condition. The prospect for rowen is good, owing to late rains. Late potatoes promise a better yield than early ones. Pears and apples are very short, particularly apples; cranberries are average, perhaps above. Pasturage is in good condition. Oats and barley compare favorably with former yields. There is very little celery raised, but what there is is good; also other late market-garden crops.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE). — Indian corn is in very good condition. The rowen crop is above the normal. The prospect is good for late potatoes, with no blight or rot at present. Apples, pears, peaches, grapes and quinces promise poorly; cranberries fair. Pasturage is in good condition. Oats are a good average crop.

NANTUCKET COUNTY.

Nantucket (H. G. WORTH). — Corn was never in better condition. There will be a big crop of rowen. Potatoes are rotting badly. There will be a fair cranberry crop. Pastures are in good condition. Oats and barley are fully up to former years in yield. Celery and late market-garden crops are in good condition.

BULLETIN OF MASSACHUSETTS BOARD OF AGRICULTURE.

CELERY GROWING, STORING AND MARKETING.

By HENRY M. HOWARD, *Dix Farm, West Newton, Mass.*

The raising, bleaching and keeping of celery is easy enough, if certain methods are carefully pursued. Success is sure if the right thing is done at the right time in the right way. Any one who follows the directions and methods mentioned in this article will be sure to succeed in growing and keeping celery. You may succeed if you do not exactly follow these methods, because there are other ways of doing these things beside those mentioned here.

SOILS.

Almost any soil will grow good celery when that soil is properly prepared and kept in good condition. A soil that will grow good crops of beets, onions or lettuce will grow good celery. The soil must be rich, moist and loose. A low, moist, cool soil will grow good celery in mid-summer to sell in July and August, but is not a good soil for that to be harvested in November. A heavy loam will carry a good crop to maturity in September or later. To have a crop mature in September it must be set in June. A light, sandy soil or a gravelly loam may be set to celery from July 20 to August 10, and made to yield an excellent crop. This last soil should not be set to celery before July 20, as the cost for care and water would be too great.

VARIETIES TO PLANT.

Be sure to buy your seed of the same firm every year, and insist on having the same strains and varieties that market gardeners use,—Paris Golden for early use and Giant Pascal for late use. These two varieties are largely cultivated, and are as good as any that are grown. The French strains are best.

The Paris Golden makes a good celery to use up to November, and is easily bleached with boards. The Giant Pascal may be had ready

for the table from September 10 on, and will keep as well as any variety. It must be bleached with soil or grown in the pit, to be of good quality.

METHODS OF GROWING THE PLANTS.

Plants may be started in flats in the house, or under glass in a hotbed or greenhouse. Prepare a flat thus : Take a box not over 2 inches deep, and with other dimensions of any convenient size, sift in 1 inch of sharp sand or coal ashes, and then fill in the box level full with good sifted garden soil. Press the whole down and level the surface. Sow the seed broadcast and sift on a little more loam, covering the seed a little less than $\frac{1}{8}$ inch. Keep moist and warm until the plants appear, which should be in from one to three weeks, according to temperature and age of seed, but chiefly temperature. Keep the plants growing, and prick out in a hotbed or cold frame, setting about 300 plants to the sash. The plants should be kept under glass, and made to grow by proper care in watering, ventilating and keeping warm at night, using mats on the glass for that purpose. Seed sown in flats or under glass March 1 should give plants large enough to prick out April 10. These plants, if carefully grown, should be ready to go into the field by May 10.

Another way to get good plants is to sow in rows 6 inches apart in a hotbed or cold frame from March 1 to March 15. The ground should be kept moist and warm until the plants appear, and should then be stirred between the rows, and the plants ventilated and cared for the same as when started in flats.

Good plants for the main crop can be grown by sowing the seed broadcast or in rows in the open field as early in the month of March as you can sow peas. Cover the seed not more than $\frac{1}{8}$ inch. These plants should appear in about three or four weeks; less attention than is required in the methods previously mentioned will give plants of good size to set after early crops of lettuce, beets or beans. Celery seed may be sown up to May 1 with good prospect of getting plants large enough to set in July and August.

Market gardeners raise many plants in greenhouses and hotbeds to set on low land for celery to market in July and August. The plants for all celery marketed later than that come from seed sown with a machine in the field, in rows 8 to 12 inches apart.

If your plants are not growing as rapidly as you wish, give a little nitrate of soda and plenty of water. You must be careful, or the plants will suffer from too much nitrate of soda. If the plants are getting too large, cut back the tops and loosen the roots, to check their growth and start new roots and tops. The effect produced by loosening the roots with a fork is very much the same as that of transplanting, and far more economical. Plants should not be thicker than four or five to the inch in the row, and must be thinned if they stand thicker than this. If sown too thick broadcast, it will be best to transplant all

plants, setting them in rows about 6 inches apart, and the plants as close as possible in the row. If a broadcast bed gets too weedy, it will be found cheapest and best to transplant to a new bed, using plenty of water until the plants become established.

THE PREPARATION OF THE SOIL.

It is well understood that in order to have a good garden, manure is needed. Fresh horse manure is good manure to plow in for a garden, and 5 cords every year are needed for a garden of $\frac{1}{4}$ acre. If you will use that much manure you will find that whatever you plant grows better than it did before and matures more quickly, and that your crops do not feel the effects of dry weather as badly.

For celery prepare the land by plowing in all weeds and refuse and what manure you need after the first crops of peas, beans or beets are removed. Harrow and drag the surface, and then you may wait for right weather conditions. If they do not come, and you are ready to set the plants, harrow and drag again and then wet down the whole surface of the soil with water, using 1 inch of water, which would amount to 27,180 gallons to the acre. There is nothing else that will do as much good just at this time. Lay off the rows 2 to 5 feet apart, and set the plants as soon as the land is in fit condition. If both early and late celery are grown, you may set the rows of late celery between the rows of early, the rows of each variety being 4 feet or more apart. This method of planting enables you to get a good row of celery every 2 feet. By setting the plants 6 inches apart in the row you can get one good root of celery for each square foot of your land.

Each person setting plants should set 400 or more an hour, and the plants should be so firmly set that in trying to pull one out by a leaf the leaf will break before the plant will start to come out of the ground. If the weather continues dry after the plants are set, more water should be given them.

As soon as a day or two after the plants are set they may and should be shoveling and this style of hoeing should be continued every four or five days until the plants shade the ground.

Celery likes a soil well prepared by plowing, harrowing and dragging, and will do best where fresh manure is plowed in. If the land is not wet, water must be applied before the plants are set. If the plants must be pulled any length of time before setting, they should be stood in water for a few minutes and then placed in the shade until wanted for setting. New white roots will start to grow at once, and in a day or two after setting you will be able to see that the plants are growing. Boys may pull and drop the plants for the men to set.

Water should be used freely before and sparingly after setting the plants. A $\frac{3}{4}$ -inch hose with 65 to 75 pounds pressure will run 600 to 700 gallons of water an hour, and will take something like four days to wet down an acre of land sufficiently for setting celery, costing about \$14

or \$15 for water and labor. Some sort of a labor-saving sprinkler system should be used. The writer has tried several such, and is satisfied that there is no system any better or more economical than the Skinner system. The pipes may be laid on the surface of the ground when preparing the land, and may be left there until the celery is nearly grown. Should it need watering when nearly mature, set the pipes up on stakes about 3 feet above the surface of the ground. This system is made of iron pipe and brass fixtures, and will last a long time. It will be found very satisfactory in any garden of $\frac{1}{4}$ acre or over. Most other systems require more labor and also the use of considerable hose, which soon wears out and is sure to injure more or less plants while being used.

If only Paris Golden celery is grown, the rows may be from 2 to $2\frac{1}{2}$ feet apart, and do well. Many market gardeners have also tried growing the Giant Pascal celery in rows that distance apart, and continue to do so, bleaching the crop in the pit. Another way of setting that has been tried by many, and seldom tried a second season, is that of setting the plants 1 foot apart each way. You can get in as many plants if they are set 6 inches apart in rows 2 feet apart, and the cultivation is much simpler, and can be largely done with a horse and a five-tooth cultivator.

CULTIVATING.

The whole idea of cultivating celery is to keep the ground loose and cultivation shallow, and it is just as important to cultivate in a wet time as when there is continued dry weather. The ground is apt to get hard in wet weather, and the roots get too numerous near the surface; then a period of dry weather follows, and the cultivation cuts off so many roots that the crop suffers and is more liable to disease. With proper preparation of the soil and proper cultivation of celery we have no fear of disease, and no use for nitrate of soda or spraying with Bordeaux mixture to prevent blight. Nitrate of soda is good to make celery move along a little faster, and it is safe to use 200 to 300 pounds to the acre between the rows, or 2 pounds to a row 100 feet long in a garden.

BLEACHING.

The early or Paris Golden celery may be bleached with boards and come out of the way, so that the late celery or Giant Pascal can be banked with earth. This is the plan used where you wish to sell all the celery from the field. The boards used are rough boards, not less than 10 inches wide, 12 feet long and 1 inch thick. These same boards are used in making storage pits for the winter celery. The boards are set up on edge as straight as possible, and kept in place by slats nailed across the upper edges of the boards, about 2 feet from the ends. The space between the boards through which the celery grows should be left at least 4 inches wide. Many market gardeners use a heavy galvanized-wire hook to drop over the edges of the two boards. These

hooks are very easy to handle, and very convenient when taking out celery. They are safe, doing away with sharp nails for horses or men to step on. The time needed for celery to bleach in the boards is from one to three weeks, according to the weather and the growth of the celery. It is not safe to set up boards to celery after the 1st of October. The celery is apt to bleach slowly after that, and a frost is liable to occur after October 22 that will injure the celery in the boards.

Giant Pascal celery may be bleached very early in September by earthing up. Great care is needed that the plants be dry, well pressed together, and not buried when putting the dirt up to them by means of the plow, the hoe and the shovel. The soft earth is plowed up to the row, the hoe is used to press the dirt in firmly, and the shovel is used to carry and pack the dirt still higher up on the stalks. A 10-inch bank will do excellently for September banking. After the bank is up for a week the celery should be examined every day, as it is very liable to rust in the bank at this time of year. Not much should be banked at a time thus early in the season, and every few days a little more may be banked, thus having a continuous and increasing supply coming on for market. It is best to drive a stake at the first row of each new lot banked, and write on the stake the date of banking. You will find the celery ready to use in about ten days if banked early in September.

Where Giant Pascal celery is planted by itself to be sold from the field, the rows should be $3\frac{1}{2}$ feet apart. Every other row can be earthed up early and sold, and then a broader, thicker bank put up to the row which is left, to be taken out as late as November 25. Almost all the celery around Boston is housed by November 20. These later-banked rows may be the very best celery to try to keep late in storage, if the celery gets bleached only a very little. Usually, the later the celery is put in storage the later it will keep.

STORING.

Celery is prepared for storing away in pits or cellars by banking it in the field about a week before it is to be put in. Near Boston we begin to put the celery into the pits by October 18, and continue to store it away every day when the weather is favorable until the crop is all in. Choose days that are not too windy or wet, and get the celery to the pit and set up before the roots dry out. In plowing out the celery, a good plowman with one good horse will soon be able to turn out the rows so flat as to look like machine work, and not a plant will be bruised or hurt. Then we give the root a little kick with the foot and a little shake with the hand, trim off the loose or crooked outside leaves, and lay the roots in piles of convenient size to load. Some farmers trim the celery at the pit; but it saves much time in handling and teaming to trim it in the field, and this is the method usually followed.

The celery is set in the pit in rows 3 to 4 inches apart, and the plants touching in the row. The plants are set about 3 inches deep in these rows, and the dirt made firm enough on the roots to keep the celery standing upright.

If you wish to keep celery very late, into April or May, you must give the plants more room in the pit, setting them at least 3 inches apart each way, and be attentive to covering and ventilating. The roof of the pit must be water tight, and supplied with ventilators every 10 feet. The covering on the roof should be 8 inches of leaves or strawy manure, or about 1 foot of salt hay. If there is a good covering on the pit, it will be safe to give ventilation even on very cold days. There should be thermometers in the pits to guide as to temperature. The pits should be kept from sweating, and enough air should be supplied to keep the celery tops dry. The temperature should be kept as nearly at 32° F. as possible, if it is desired to keep the celery late. With a pit well covered, an outside temperature of 20° and an inside temperature of 35°, some ventilation should be given and the pit cooled down to 32° and kept dry. If a pit gets too cold, a space large enough to set a cast-iron coal stove should be cleared, a good coal fire built, and it will soon be warmed up.

A pit which is to stand over winter needs to have a double-pitch roof, 7 feet high at the ridge, about 3 feet at the eaves, and should be well banked on the ends and sides with loam. The width of the pit will be about 23 feet when 12-foot boards are used on the roof. The ridge should be a 2 by 6 inch plank, supported every 5 feet by a post; the purlines to support the roof boards may be of 2 by 6 to 3 by 4 inch stuff, with a post every 5 feet. The sides of the pit may be of earth, or of earth and plank. A walk 1 foot wide, from one end of the pit to the other along the middle, nearly under the ridge, is convenient and aids in getting a closer view of conditions inside the pit. The ventilators are made by using two boards right over the posts supporting the ridge and purlines, and these ventilators are on each side of the pit, and alternate. They may be thrown wide open or opened just a few inches at the top, according to the weather. The celery is removed by opening wide one of these ventilators near where the celery is ready to come out. Celery pits need a great deal of attention to ventilation, if you wish to keep the celery late.

MARKETING.

The earliest celery in the market is Paris Golden. Often by July 10 we find this celery coming on the market in fine shape. When several roots are needed to make a bunch, they are fastened together by nails through the root. Many times a single root is large enough for a bunch. Eighteen bunches are packed in a bushel box. The Paris Golden is a very handsome celery when well grown and well put up for market. It has a strong flavor, is tough and will stand up well. It

grows large, is a good keeper and a good money maker. It is often bleached with earth, the same as Giant Pascal celery, and when so bleached is much better for eating.

All celery should be kept covered with wet paper or bagging after it is put up for market, and kept as cool as possible. Use plenty of ice, chopped fine, and plenty of paper on early celery, if you would have it look well and command the top price.

The Giant Pascal celery is put up for market the same as the early celery. The bunches are made as regular in size as possible; three to five roots are put in a bunch, and eighteen bunches are made to fill a bushel box. The Pascal is a large, strong-growing celery. It is of mild flavor, and brittle. It has a waxy look, a nutty flavor and a crispness which make a great demand for it as soon as it appears in the market. The very best, cleanest and slickest-looking Pascal celery can be had by bleaching it in a pit. Set the plants as before described in a pit, having taken pains to have the soil in the pit well wet down, keep the pit a little close until the plants get rooted, and give air according to growth desired. Great care must be exercised, or the whole pit of celery will come forward too fast and be difficult to sell in the short time in which it ought to go, especially if your market is small.

Aim to put up your celery so well that there will be a strong demand for your mark.

For small gardens, where a fresh supply is wanted daily, a whole tubful of plants may be prepared from the pit at one time, leaving the roots on and having about one pailful of water in the tub.

In summing up, the essentials of success in the celery business are as follows: good seed, sown early in rich soil; the plant must be kept growing; transplanting should be done only after the land is properly prepared; cultivation should be frequent and shallow; water beside rainfall should be used if necessary; bleaching must be carefully attended to; storage pits must be well built and ventilated; and when the crop is grown, it should be put in fancy shape and sold for the highest price.

MASSACHUSETTS CROP REPORT

FOR THE

MONTH OF SEPTEMBER, 1910.

QUINCE CULTURE.

ISSUED MAY TO OCTOBER, BY STATE BOARD OF AGRICULTURE,
STATE HOUSE, BOSTON, MASS.

J. LEWIS ELLSWORTH, *Secretary.*

ENTERED JUNE 3, 1904, AT BOSTON, MASS., AS SECOND-CLASS MATTER,
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CROP REPORT FOR THE MONTH OF SEPTEMBER, 1910.

OFFICE OF STATE BOARD OF AGRICULTURE,
BOSTON, MASS., Oct. 1, 1910.

Bulletin No. 5, being Crop Report for the month of September, is herewith presented. With the harvests well in progress it is now possible to determine approximately the results for most farm crops. The question in regard to frost damage would not have been asked if we could have forecasted weather conditions at the time of preparing the circular to correspondents, but these data are of course interesting. The special article is on "Quince culture," and is furnished by Prof. F. C. Sears, professor of pomology at the Massachusetts Agricultural College. This fruit is considerably neglected and not of the first importance, but this article supplements those published in former years on peach, plum and pear culture. It is planned to collect this material, with other lectures of value, into a bulletin on small fruits and berries, which we hope to issue very shortly.

PROGRESS OF THE SEASON.

The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture (Crop Reporter for September, 1910) estimates the average condition of corn on September 1 to have been 78.2, as compared with 79.3 a month earlier, 74.6 in 1909, 79.4 in 1908, and a ten-year average of 79.5.

The average condition of spring wheat when harvested was 63.1, as compared with 61 on August 1, 88.6 when harvested in 1909, 77.6 in 1908, and a ten-year average of 78.

The average condition of barley when harvested was 69.8, against 70 on August 1, 80.5 when harvested in 1909, 81.2 in 1908, and a ten-year average of 83.1.

The average condition of the oat crop when harvested was

83.3, against 81.5 on August 1, 83.8 when harvested in 1909, 69.7 in 1908, and a ten-year average of 79.5.

The average condition of buckwheat on September 1 was 82.3, against 87.9 on August 1, 81.1 on September 1, 1909, 87.8 in 1908, and a ten-year average on September 1 of 79.8.

The average condition of white potatoes on September 1 was 70.5, against 75.8 a month earlier, 80.9 in 1909, 73.7 in 1908, and a ten-year average of 79.8.

The average condition of tobacco on September 1 was 77.7, against 75.8 a month earlier, 80.2 in 1909, 84.3 in 1908, and a ten-year average of 82.3.

The average condition of apples on September 1 was 46.8, against 47.8 a month earlier, 44.5 in 1909, 52.1 in 1908, and a ten-year average of 54.7.

The preliminary estimate of the yield per acre of hay is 1.34 tons, as compared with 1.42 as finally estimated in 1909, 1.52 in 1908, and a ten-year average of 1.44 tons. The average quality is 92.5, against 93 last year, and a ten-year average of 90.8. A total production of 60,116,000 tons is indicated, as compared with 64,938,000 tons in 1909.

The average condition of other crops was as follows: clover for seed, 78; stock hogs, 96.6; flaxseed, 48.3; rice, 88.8; peaches, 64; grapes, 73.5; pears, 63.9; alfalfa, 84.9; kafir corn, 79.2; millet, 74.8; watermelons, 74.5; cantaloupes, 74.9; cranberries, 76.8; oranges, 84.3; lemons, 90.7; sweet potatoes, 83.9; tomatoes, 78.6; cabbages, 85.8; onions, 83.8; beans (dry), 84.6; beans, Lima, 84.8; hemp, 82.8; hops, 87.6; sorghum, 83.2; sugar cane, 87.9; sugar beets, 85.6; peanuts, 85.6.

In Massachusetts the average condition of corn was 90; of oats, 97; of buckwheat, 90; the yield per acre of hay was 1.30 tons; the condition of clover for seed was 90; of stock hogs, 99; of tobacco, 95; of potatoes, 81; of apples, 66; of peaches, 50; of grapes, 81; of pears, 82; of millet, 90; of watermelons, 78; of cantaloupes, 74; of cranberries, 75; of tomatoes, 85; of cabbages, 84; of onions, 79; of beans (dry), 85; of beans, Lima, 80.

TEMPERATURES AND RAINFALL FOR THE WHOLE COUNTRY.

[FROM UNITED STATES NATIONAL WEEKLY WEATHER BULLETINS.]

Week ending September 5. — Cool weather developed in the northwest and extended into the Rocky Mountain districts by Tuesday, with freezing temperatures in Wyoming. Warm weather continued over the more eastern districts until near the middle of the week, when it was gradually displaced, especially over the northern portions, by the advancing cool weather from the west. This was followed by a gradual increase, and at the close of the week temperatures were unusually high in the central and southern portions of the country and over the middle Atlantic coast districts. Heavy rains occurred along the coast from Florida to North Carolina, and there were other storm areas on the west Gulf coast and in the northern Lake region. General cloudy and rainy conditions overspread much of the country east of the Rocky Mountains, continuing locally until near the end of the week, but without any well-defined or extensive storm area.

Week ending September 12. — At the beginning of the week warm weather prevailed over the interior and southern portions of the country, while over the more northern districts west of the Rocky Mountains it was generally cool. Near the middle of the week cooler weather set in in the northwest, moving rapidly southeastward and overspreading the Mississippi valley by Thursday morning, with the temperature near the freezing point. The cool wave moved rapidly eastward, with unseasonably low temperatures, followed by somewhat warmer weather, so that at the end of the week the temperatures in the central valleys were more nearly normal. At the beginning of the week a considerable area of rain covered the districts from the lower Missouri valley and Middle Plains region eastward to the Great Lakes, and over portions of the Ohio valley and New England. Local rains occurred at widely separated points from the Mississippi valley eastward during the remainder of the week.

Week ending September 19. — Cool weather moved into the central valleys during the early part of the week, accompanied by light frosts over the more northern districts. Its

eastward movement was comparatively slow, and cool weather continued during the remainder of the week over the eastern and southern districts, with occasional light frosts at exposed points. During Friday and Saturday the temperatures were seasonably warm throughout the central valleys, advancing into the more eastern districts during Sunday. A tropical disturbance in the Gulf district was accompanied by heavy rains and high winds on the south Texas coast, with 10 inches of rain at Brownsville and 5 inches at Corpus Christi. During the week scattered rains occurred in the Lake region and Ohio valley and along the Atlantic coast, but no general rain area crossed any portion of the United States.

Week ending September 26. — The week opened with comparatively cool weather prevailing from the lower Lake region to New England, with light frosts at exposed points in the more northern districts. Over the remaining portion of the country the temperatures were moderate, continuing until about Wednesday, when an area of high pressure overspread the upper Mississippi valley and Lake Superior region, accompanied by considerably cooler weather, which, advancing eastward during Thursday and Friday, brought the coldest weather of the season to date over portions of New England and the North Atlantic States. Unsettled weather conditions prevailed in the Ohio valley at the beginning of the week, and moved eastward, bringing local showers. During Wednesday and Thursday a considerable rain area overspread the upper Missouri valley and portions of the Rocky Mountain region, moving into the lower Missouri and middle Mississippi valleys and Lake region during the following two days, accompanied by rather general and occasionally heavy rains.

SPECIAL TELEGRAPHIC REPORTS.

[WEATHER BUREAU, BOSTON.]

Week ending September 5. — New England. Boston: Frequent and copious showers fell, which were of much benefit. Sunshine was below normal, and the temperatures were moderate.

Week ending September 12. — New England. Boston:

The rainfall was above normal, copious showers having fallen the first of the week, which were of much benefit. The temperature was seasonable and the average amount of sunshine was received. Light frost formed in parts of Vermont the last of the week.

Week ending September 19. — New England. Boston: Moderate showers in Maine and New Hampshire the first of the week were the only rainfall of consequence. There was the average amount of sunshine, and the temperatures were moderate. Light to heavy frosts occurred in the latter part of the week in Vermont and the interior of Maine.

Week ending September 26. — New England. Boston: Only light scattered showers occurred during the week. Ponds and rivers continue low. There was the average amount of sunshine. Heavy to killing frosts occurred over a large portion of the interior on Friday morning.

THE WEATHER OF SEPTEMBER, 1910.

The month was cooler than the average, with the precipitation considerably below the normal for September. The cool weather of the month was not the result of any very low or unseasonal temperatures, but of remarkably uniform moderate temperatures. There were no hot days, with the mercury well into the 90's, such as at times prevail for several days and are characteristic of September weather, and the maximum temperatures ranged in the 80's on an average of only six days. The nights were seasonably cool, and generally speaking without killing frosts. A period of unsettled showery weather prevailed through the first week, with light to moderate rains in some portion of the State each day, although the total rainfall during the time was not excessive or unusual. From the 8th to the 18th, both inclusive, there was almost an entire absence of rain. During the remainder of the month showers fell irregularly, in light to moderate amounts, and chiefly on the 20th, 21st, 24th, 27th and 28th. The monthly precipitation was generally from 25 per cent to 30 per cent below the normal for the month. With the exception of the first week, there was an abundance of sunshine. No high winds or storms prevailed along the coast.

during the month. The winds were variable, and generally light to moderate in force. The weather of the month, as a whole, was very favorable to the maturing, the harvesting and the housing of crops. Rain is needed and it would be very beneficial to meadows and to fall pasturage.

PUBLICATIONS OF THE MONTH.

Pursuant to our intention announced last month, we give below a list of publications issued in September, together with a few omitted in the list of the previous month. The annual report for 1909 will be sent to any one on receipt of either 20 cents in stamps to cover postage, or instructions to ship by express at applicant's expense. "Useful Birds and their Protection" will be forwarded by express, charges collect, on receipt of \$1 in cash, money order or check. Postage is 36 cents, and should be sent with the price of the book when it is desired that the book be shipped by mail. The other publications named will be mailed free of charge.

Annual Report, 1909.

Crop Report, August, 1910, containing "Celery Growing, Storing and Marketing;" also a list of publications.

Reprints from Annual Report, 1909: second annual report of the State Ornithologist; nineteenth annual report of the Dairy Bureau of the State Board of Agriculture.

Apiary Inspection, Bulletin No. 1: "Brood Diseases of Bees, their Treatment and the Law for their Suppression in Massachusetts."

"Useful Birds and their Protection," by Edward Howe Forbush, State Ornithologist. Third edition, cloth, 457 printed pages, 57 plates and 171 other illustrations. Price, \$1; postage prepaid, \$1.36.

ANNUAL REPORTS.

From our annual reports we have selected a list of lectures and essays on subjects for material on which there is a more or less constant demand. Some of the articles have been published in pamphlet form, but many have either not been so published or are out of print. Nearly all the essays and lectures in the reports issued since 1902 are listed, as they are of an extremely practical nature. Of some editions there is a considerable supply on hand, but the increasing demand

is sure to deplete them sooner or later. Therefore, we feel that the readers of this report should know what information the annual reports contain.

We do not have the franking privilege; the expense of shipping is prohibitive and must be borne by the applicant. Where more than one or two copies are ordered it will usually be cheaper to have them shipped by express, charges collect. The amount of postage required on the different reports is given below; stamps should be sent with application: annual report for 1893, 25 cents; 1894, 27 cents; 1895, 22 cents; 1896, 26 cents; 1897, 23 cents; 1898, 24 cents; 1899, 22 cents; 1903, 22 cents; 1904, 23 cents; 1905, 22 cents; 1907, 20 cents; 1909, 20 cents.

1893. Raising Crops with Commercial Fertilizers. By S. I. Parker.

The Handling and Feeding of Dairy Cattle. By Ex-Gov. W. D. Hoard.

Judging Animals by Seale of Points. By Dr. G. M. Twitchell.

The Horse. By Hon. John E. Russell.

Fruit Growing. By E. W. Wood.

The Reclamation of Exhausted Farms by Practical Methods. By Elbridge Cushman.

1894. Salt Marsh Hay. By Prof. G. H. Whitcher.

How to keep up the Fertility of Our Farms. By Prof. Wm. P. Brooks.

Summer and Winter Feeding of Dairy Cows. By Prof. J. W. Robertson.

1895. The Milk Supply of Massachusetts Cities. By Geo. M. Whitaker.

The Necessities and Demands of Modern Dairying. By Ex-Gov. Wm. D. Hoard.

Rational Stable Management. By Dr. F. H. Osgood.

Field Crops. By Prof. Wm. P. Brooks.

Hints on Land Drainage. By Wm. Wheeler.

1896. Growing Timber as a Crop on the Waste and Other Cheap Lands of Massachusetts. By J. D. Lyman.

Commercial Plant Food. By Prof. W. H. Jordan.

Use of Pure Cultures in Butter Making. By Prof. F. S. Cooley.

The Crow in Massachusetts. By E. H. Forbush.

The Babcock Milk Tester. By Geo. M. Whitaker.

Concentrated Feed Stuffs. By Dr. J. B. Lindsey.

- 1897.** Milch Cows, Structure as relating to Production. By Dr. Geo. M. Twitchell.
- Market Gardening with Limited Capital. By H. W. Collingwood.
- Small Fruits in the Home Garden. By Prof. S. T. Maynard. *
- Why Milk sours, and how the Souring can be prevented or at least delayed. By Geo. M. Whitaker.
- Systematic Feeding and Watering as a Preventive of Disease in Horses. By Prof. Jas. B. Paige.
- 1898.** The Business Side of Agriculture. By J. H. Hale.
- The Place that Fruit Growing should hold in New England Agriculture. By S. D. Willard.
- How can New England compete with the West in Dairying? By Prof. J. L. Hills.
- Catch Crops. By Prof. Wm. P. Brooks.
- Tuberculosis and the Milk Supply. By Geo. M. Whitaker.
- Milk and Cream. By Dr. J. B. Lindsey.
- Stable Disinfection. By Prof. Jas. B. Paige.
- 1899.** Dairying. By Hon. Wm. R. Sessions.
- Market Gardening. By H. R. Kinney.
- The Composition and Economical Use of Commercial Fertilizers. By Dr. H. J. Wheeler.
- The Evolution of Agriculture. By O. P. Allen.
- The Evolution of Farm Machines. By Geo. P. Smith.
- Spraying of Crops for Profit. By Prof. S. T. Maynard.
- Practical Hints for the Dairymen. By Prof. F. S. Cooley.
- Suggestions for the Use of Barn-yard Manure. By Prof. Chas. Wellington.
- 1903.** Progressive and Profitable Poultry Culture. By Prof. Arthur A. Brigham.
- Outlook for New England Agriculture. By Geo. M. Twitchell.
- The Successful Type of Horse that may be profitably raised by New England Farmers. By Harry W. Smith.
- Manurial Problems in Soil Renovation and Improvement. By Dr. H. J. Wheeler.
- Improved Live Stock. By Prof. C. H. Shaylor.
- Fruits for the Home Garden: Varieties and Culture. By Prof. F. A. Waugh.
- Summer Management of the Dairy Herd. By Prof. F. S. Cooley.
- Bee Keeping: its Pleasures and Profits. By Prof. Jas. B. Paige.

The Management of Poultry on Small Farms. By John H. Robinson.

Some Important Scale Insects. By Dr. H. T. Fernald.

The Prevention of Fungous Diseases peculiar to Greenhouse Plants. By Dr. Geo. E. Stone.

Special Report on the Destruction of Birds by the Elements. By E. H. Forbush.

- 1904.** Harness your Forces. By Dr. Geo. M. Twitehell.
 Producing and Marketing of Milk. By Frank B. Allen.
 The Profitable Dairy Cow. By Prof. C. S. Plumb.
 The Advisability of Agricultural Education in Elementary Schools. By Prof. L. H. Bailey.
 Present Definitions of Soil Fertility. By Dr. W. H. Jordan.
 Food Adulteration and the Farmer. By Dr. H. W. Wiley.
 The Hay Crop in Massachusetts. By Prof. Wm. P. Brooks.
 The Growing of Mushrooms. By Dr. Geo. E. Stone.
 Harvesting and marketing Apples. By Prof. F. A. Wangh.
 Breeds for the Farm, and Farmers as Poultry Breeders.
 By John H. Robinson.

Bee Keeping: how to meet its Dangers and Difficulties.
 By Dr. Burton N. Gates.

- 1905.** Matters of Importance in Rural Betterment. By Hon. N. J. Bachelder.
 Market Gardening. By Henry M. Howard.
 The Soil: Importance of its Character for the Culture of Fruit. By Geo. T. Powell.
 Dairy Precept and Dairy Practice. By Dr. J. L. Hills.
 A Campaign for Rural Progress. By President K. L. Butterfield.
 Nitrogen in Relation to Soil Fertility. By Dr. Chas. D. Woods.
 Bush Fruits. By Prof. Fred S. Card.
 The Management of Mowings. By Prof. Wm. P. Brooks.
 How to supplement a Short Hay Crop. By Prof. Chas. S. Phelps.
 Practical Poultry Housing. By John H. Robinson.
 Commercial Pork Making and Pig Raising in New England.
 By A. A. Southwick.
 Clean Milk: Suggestions for the Average Producer. By P. M. Harwood.

- 1907.** Market Gardening. By Prof. H. F. Hall.
 Breeding and raising Garden Seeds. By Wm. W. Tracy.
 Breeding and managing Dairy Cattle. By Prof. Thomas Shaw.

Market Milk, from Present-day Standpoint. By C. B. Lane.

Massachusetts Fruit Trees and their Insect Foes. By Dr. H. T. Fernald.

The Farm Help Problem. By Burton W. Potter.

Corn as a Grain Crop in Massachusetts. By Prof. Wm. P. Brooks.

Plum Culture in Massachusetts. By Prof. F. A. Waugh.

Hatching and rearing Chicks by Natural Methods on the Farm. By John H. Robinson.

Bee Keeping: Some Suggestions for its Advancement in Massachusetts. By Dr. Burton N. Gates.

Greenhouse Pests and their Control. By Dr. H. T. Fernald.

Statutory Bird Protection in Massachusetts. By E. H. Forbush.

1909. Market Gardening. By H. B. Fullerton.

The Development of Agriculture by Organized Effort. By Dean Eugene Davenport.

Varieties of Apples for Massachusetts Orchards. By Prof. F. C. Sears.

Education of the Dairyman and the Dairy Cow. By Prof. H. E. Cook.

Crop Rotation for the Dairy Farm. By H. O. Daniels.

Poultry Keeping on Small Farms. By Rev. W. H. Davenport.

The Farmer's Interest in Game Protection. By E. H. Forbush.

Economy of Labor in Poultry Keeping on Farms. By John H. Robinson.

Live Stock in Massachusetts. By Prof. J. A. Foord.

Western Methods in New England Orcharding. By Prof. F. C. Sears.

The Culture of the Pear. By Geo. T. Powell.

In the circular to correspondents, returnable September 22, the following questions were asked:—

1. How does the crop of Indian corn compare with a normal crop?
2. Are the rowen crop and fall feed up to the usual average?
3. Has the usual amount of fall seeding been done and what is its condition?
4. How does the onion crop compare with a normal crop?

5. How do potatoes compare with the normal in yield and quality?

6. What is the prospect for root crops, celery and other late market-garden crops?

7. How have apples, pears, peaches, grapes and cranberries turned out?

8. Has there been injury from frost, and, if so, on what dates did it occur?

Returns were received from 135 correspondents, from which the following summary has been made up:—

INDIAN CORN.

The warm and sunny weather of September, with entire absence of killing frosts, up to the time of making returns, enabled Indian corn to mature well in almost all sections. The crop appears to have been somewhat below the normal in Berkshire County and in some of the towns of higher altitude elsewhere in the State, but in other sections it approached very close to the normal, both for grain and stover. In the Connecticut valley, one of the principal corn-growing sections, the crop seems to have been unusually good. Everywhere that the crop was planted on well-manured land, early in the season, and well cultivated during the growing season, it has done well.

ROWEN AND FALL FEED.

There was little rowen in most sections, except on new-seeded and fertile fields, and even there it was much lighter than it would have been with seasonable rains. In southeastern Massachusetts, however, the rowen crop appears to be in excess of the normal for that section, due to showers in midsummer, which were entirely local. This section of the State is the one which usually suffers most from drought, and a normal crop of rowen for that section would be considerably below the normal for central and western counties. Feed in pastures has been kept green by the frequent light showers, and there is less complaint of failing pastures than would be expected from the other effects of

drought. Nevertheless, the amount of feed in the pastures is small at this time, and feeding at the barns is necessary in most cases to keep up the flow of milk.

FALL SEEDING.

Very much less than the usual amount of fall seeding was done, owing to dry weather, which made plowing and working the land difficult, and discouraged most farmers from attempting to seed. Varying reports are received as to the condition of that put in, some complaining of failure of germination, while others say that it is in very fair condition. The showers in most sections have kept it growing during the month, but heavy rains are undoubtedly needed for its future development.

ONIONS.

Onions are generally a light crop in all sections, especially in the Connecticut valley, from two-thirds to three-fourths of a normal yield as a rule. The bulbs are small and the yield per acre light, but they seem to be free from rot and in good condition for market, with about average conditions as to maturity. Some damage from thrips is reported, but very little blight.

POTATOES.

Late potatoes would have been at least an average crop except for rot, which has cut the yield short very materially. Rot appears to be most prevalent in Berkshire County, where it may be said to be fairly general, gradually becoming less so in central and eastern sections, but no county appears to be entirely free from this trouble. Tubers are of good size and fair and smooth, though not numerous in some cases, and the quality seems excellent where the rot has not appeared. Our farmers do not seem to learn that spraying for fungous diseases is as necessary, or even more so, for success with potatoes, as spraying against the potato bug.

ROOT CROPS, CELERY, ETC.

Root crops are generally said to be in good condition, the recent showers having helped in their development materially, and should give normal yields. Celery will generally be a light crop, owing to unfavorable weather at time of transplanting and droughty conditions thereafter. Late market-garden crops in general are not in particularly good condition, owing to drought, and need abundant rains if they are to give normal crops.

FRUIT.

Apples are a light crop in almost all sections and small in size, except where cultivation is practiced and the orchards well fertilized. More spraying has been done this year than ever before, with the result that the crop is generally free from insect damage, and is probably more valuable, as a whole, than many of the larger crops secured in previous years. The New England Fruit Show of last year apparently drove the lesson of the benefits of spraying home to a great many farmers, and the force of example had much to do with the number who are this year practicing it. Pears are a good crop of good quality. Peaches were a light crop in most sections, with some notable local exceptions. Grapes are not above the average in condition and promise only a fair crop. Cranberries are a light to medium crop in southeastern sections, the berries being rather small in many cases.

INJURY FROM FROSTS.

Several light frosts occurred during the month, but with no appreciable damage to crops up to the time of making returns. Vines and tender vegetables were nipped in some sections, but the staple crops were generally uninjured.

NOTES OF CORRESPONDENTS.

(Returned to us September 22.)

BERKSHIRE COUNTY.

New Marlborough (E. W. RHOADES). — Most of the corn is cut and seems to be an average crop. Fall feed is not quite up to the usual average. Not much fall seeding has been done, as many seed in the spring with oats or other nurse crops. There are a few good yields of potatoes, but in general they are very poor. Root crops are in good condition. Apples are 40 per cent of a normal crop; pears a full crop. We have had no frosts and crops are ripening well.

Tyringham (EDWARD H. SLATER). — Indian corn is about 90 per cent of a normal crop. Rowen and fall feed are up to the usual average. Very little fall seeding has been done. There is a good crop of potatoes, both in yield and quality. Beets and turnips are looking well. Apples, pears and grapes are about 60 per cent of the normal. Indian corn was somewhat injured by frosts on September 13 and 14.

Becket (Wm. H. SNOW). — Indian corn is a good crop, but late frosts have hurt it. Rowen and fall feed are very nearly up to the average, but rowen is late on account of the dry weather. The full amount of fall seeding has been done. Potatoes are a very good crop, but rot has hurt them considerably. The prospect is very good for root crops, celery and other late market-garden crops. Pears and cranberries will give good yields, but apples must be light. We have had damage by frost, on August 27, and several times since that date.

West Stockbridge (J. S. MOORE). — Corn is about a normal crop and of good quality. The continued dry weather has prevented rowen and fall feed from being up to the normal. The usual amount of fall seeding has been done, but it is badly in need of rain. Very few onions are raised here and none for the market. Potatoes are a very good crop, but with some complaint of rot. There are very few apples; pears normal; other fruits not grown. Sharp frost on September 15 on low lands, which cut vines and tender plants.

Windsor (HARRY A. FORD). — Indian corn is a normal crop. Rowen and fall feed are not up to the usual average. Not much fall seeding has been done, but that put in looks well. Potatoes show about a normal yield, but half of them have rotted. There will be a very light crop of apples; no other fruit grown for market. Not much damage from frost as yet, only a little in low places.

Richmond (TIMOTHY B. SALMON). — Corn is about an average crop. Rowen and fall seed are up to the usual average. The usual amount of fall seeding has been done and it is in good condition. Potatoes have made an average yield and are of good quality. The prospect is good for root crops, celery and other late market-garden crops. Few apples; pears good; no peaches; few grapes. Buckwheat is a good crop. There was a little damage from frost in some sections on September 8.

Hancock (B. H. GOODRICH). — Some of the earlier fields of Indian corn are excellent and some of the others decidedly the reverse. Rowen and fall feed are by no means up to the usual average. No fall seeding has been done. Potatoes average a very fair crop, some fields being fine and others poor; quality fine. Apples light and poor; pears heavy; grapes good; other fruits not grown. There was a little frost damage on low lands on August 26.

Lanesborough (W. E. FOSTER). — Indian corn is about a normal crop. Rowen and fall seed are not up to the usual average. The usual amount of fall seeding has not been done. Potatoes are rotting quite badly. The prospect is fair for root crops, celery and other late market-garden crops. Apples will be a very light crop. There has been no injury from frost.

Williamstown (S. A. HICKOX). — Rowen is a normal crop. It is too early to say as to whether the usual amount of fall seeding will be put in this year. Early potatoes were a light crop, but late ones promise better. Root crops promise well. Apples are 65 per cent of a normal crop; pears 40; peaches 10; grapes 50. Have had three light frosts, but with no damage to crops.

FRANKLIN COUNTY.

Charlemont (J. M. J. LEGATE). — Indian corn is 75 per cent of a normal crop. Rowen and fall feed are not up to the usual average, owing to the lack of seasonable rains. No fall seeding has been done and there will not be until we have rain. Onions are little grown, but are fully an average crop. Potatoes have yielded well, but are rotting badly. Apples are small in size, owing to want of rain. There has been no damage from frost, though there have been two light ones.

Leyden (FRANK R. FOSTER). — Corn is fully up to the average. Rowen and fall feed are average, better than for the past two years, but not like some earlier years. The usual amount of fall seeding has been done, but it is backward on account of dry weather. Onions are an average crop. Potatoes are little more than half a crop, but the quality is excellent. Apples are a good crop; pears abundant; grapes abundant. There have been two light frosts, but they have done no material damage.

Gill (F. F. STOUGHTON). — Corn is about an average crop; some

fields heavy and some light because of drought. Rowen and fall feed are less than usual. Some seeding has been done in corn, but it has suffered from dry weather. Early potatoes were a light crop. Apples will give a light yield. There has been no damage from frost as yet.

Conway (L. T. HOPKINS). — With frosts holding off for two weeks longer the crop of Indian corn will be better than normal. The late rains have helped rowen and fall feed somewhat, but they are hardly up to the average. The usual amount of fall seedling has been done; most of it is done after tobacco, so some seed has not germinated as yet. The yield of potatoes is below normal; quality No. 1; rotting considerably. Apples poor in yield and quality, except in orchards which have received proper attention. No damage from frost.

Deerfield (DWIGHT A. HAWKES). — Indian corn is more than an average crop. Rowen and fall feed are not up to the usual average. The usual amount of fall seedling has been done and it is in good condition. Onions are much below the normal. Potatoes are a normal crop in yield and quality. Apples are a light crop; pears fair. There has been no injury from frost as yet.

Sunderland (GEO. P. SMITH). — Indian corn is about a normal crop. Rowen and fall feed are up to the usual average. The usual amount of fall seedling has been done and it looks well, except on dry land. Onions are below normal in yield, from 300 to 400 bushels per acre; prices good. Potatoes are a light yield of good quality. Apples half a crop; pears a full crop; grapes average. The tobacco crop is good, and many crops have been sold at from 14 to 18 cents per pound in the bundle. No damage from frost.

Montague (A. M. LYMAN). — Corn is a fair to good crop. Rowen and fall feed are up to the average on low land and below on high land. More than the usual amount of fall seedling has been done; much has been done in corn and it is in extra good condition. Onions are hardly more than half a crop, but are of excellent quality. Potatoes are a two-thirds crop. Root crops and late market-garden crops are not quite up to the normal. There will be apples enough for home use; not much in other fruits. No damage from frost. Tobacco is a good crop and curing well, in fine, light shades. Considerable millet is raised for seed here and this year is but half a crop. The silo is considered a necessity and many new ones have been built.

Erving (CHAS. F. CLARK). — Indian corn compares favorably with the normal. Rowen and fall feed are not up to the usual average. The usual amount of fall seedling has been done and is in fair condition. Early potatoes were below the normal in yield, late ones a fair crop. Root crops, celery and other late market-garden crops promise fairly well. Apples medium; pears and peaches plenty. No damage from frost to speak of.

New Salem (DANIEL BALLARD). — Corn is a little below the normal. Rowen and fall feed are somewhat below the average. About the

usual amount of fall seeding has been done and it is looking well. Potatoes are fully normal in yield and quality. Root crops and late market-garden crops are little grown except for family use. Apples and pears fair average crops; peaches and grapes below average. No frost yet on uplands, a little in low places.

HAMPSHIRE COUNTY.

Greenwich (WALTER H. GLAZIER). — Indian corn is mostly in the shock and is a fine crop. There is very little rowen. The weather has been so dry that but little fall seeding has been done. Potatoes are a good crop of fine quality. Root crops and late market-garden crops are only grown in a small way. No frosts to do damage to crops as yet.

Prescott (W. F. WENDERMUTH). — Corn is a full average crop. Rowen and fall feed are not quite average, but fall feed is coming on well now. Very little fall seeding has been done as yet. Potatoes are a full average crop. Root crops are grown only for stock feed and are a fair crop. Apples promise a fair crop; pears good; no peaches to speak of; grapes fair. Wells and springs are going dry and the drought is becoming serious. No frost of any account as yet.

Amherst (Prof. WM. P. BROOKS). — Indian corn is somewhat above the average of recent years. Rowen and fall feed are up to the average on the better soils, but are poor on light soils. The usual amount of fall seeding has been done and it has started well. Onions are much below the normal, not to exceed three-fifths of last year's yield. Late market-garden crops are hardly average; celery and cauliflower especially poor, on account of bad weather for transplanting. Apples are a fair crop; pears abundant; peaches and grapes abundant. No frost as yet.

Hadley (L. W. WEST). — Indian corn is a normal crop. Rowen is a light crop and fall feed is short. The usual amount of fall seeding has been done and early seeding looks well. The acreage of onions has increased, but the yield per acre is about three-fourths that of last year. Root crops and late market-garden crops are in need of rain. Potatoes are above normal in yield and of good quality. The drought is severe and rain is much needed. No frost as yet.

South Hadley (W. F. PERSON). — There is a good crop of corn. Rowen and fall feed are not up to the usual average. A large acreage of fall seeding has been put in and looks well. Onions are little grown and are a light crop. Potatoes compare well with a normal crop and are of good quality. Root crops and celery look well. Apples are a small yield; pears and grapes good. There has been no frost as yet.

Westhampton (LEVI BURT). — Corn is fully up to the average. Rowen and fall feed are below the usual average; not a two-thirds crop of rowen. The usual amount of fall seeding has been done and

is in fine condition. Potatoes are a normal crop as regards yield and quality, but are rotting badly. Root crops and late market-garden crops are not much grown. Apples never looked better; other fruits not over two-thirds usual quantity, but little grown for market. No damage from frost.

Chesterfield (HORATIO BISBEE).—Indian corn compares fairly well with the normal. Rowen and fall feed are not up to the usual average. About the usual amount of fall seeding has been done, but dry weather has checked its growth. Potatoes made a good yield, but are rotting badly. Apples have made a good growth and are of good color; pears fairly good; other fruits not much raised. But little injury from frost.

Cummington (W. A. HARLOW).—Corn is fully an average crop. Rowen and fall feed are not up to the usual average. The usual amount of fall seeding has been done and is in good condition. Potatoes are a good yield, but are rotting badly. Apples are a very good crop; also other fruits so far as grown. No frost as yet.

Plainfield (C. A. WILLIAMS).—The crop of Indian corn is full normal. The rowen crop is light on account of dry weather and fall feed the same. There has not been much fall seeding done. Potatoes are a good crop, but some fields are rotting badly. Roots are good yields; not much celery grown. Apples and pears are good crops; other fruits average. A frost on September 23 did some damage in certain places. Most crops have ripened very well. Corn stover is good and in most fields the ears are well matured and of good quality.

HAMPDEN COUNTY.

Chester (C. Z. INZELL).—Indian corn is about a normal crop. Rowen and fall feed are light. Not much fall seeding has been done. Potatoes are rotting badly. Apples are about a normal crop. No damage from frost as yet.

Russell (E. D. PARKS).—Corn is about up to a normal crop. Rowen is about half a crop and fall feed is very poor. About the usual amount of fall seeding has been done and looks fairly well. Potatoes are about an average crop, of good quality, but are rotting in some fields. Root crops and late market-garden crops are but little raised. There will be quite a few apples; pears a large crop; other fruits average. There has been but one frost and no injury to speak of.

Agawam (J. G. BURT).—Indian corn is better than a normal crop. There is a good crop of rowen and fall feed is good. More than the usual amount of fall seeding has been done and is looking finely. Onions are about an average crop. Potatoes are a good crop in yield and quality. The prospect for root crops is good. Apples are about half a crop; few peaches; other fruits good. No frost as yet.

West Springfield (T. A. ROGERS).—Indian corn is about normal,

but is late and is not all cut. Rowen is late and not up to the normal; fall seeding is looking well now. About the usual amount of fall seeding has been done and is generally looking well. Onions are not up to the normal, with some blight and some fields late in ripening. Potatoes are about a normal crop of good quality. Root crops, celery and other late market-garden crops are generally looking well. Apples are uneven; pears and peaches full crops; grapes normal. No frost as yet.

Chicopee (E. L. SHAW). — Indian corn is about a normal crop. Rowen and fall feed are short on old seeding and good on fertile fields. What fall seeding has been done is coming along slowly and needs rain. Early potatoes were a light crop; late ones a good yield of fair quality. Root crops and late market-garden crops are generally doing well now. Apples few; pears plenty; peaches few; grapes plenty. No injury from frost as yet.

Wilbraham (HENRY M. BLISS). — Corn is 90 per cent of a full crop. Rowen and fall feed are suffering from drought and are about 80 per cent of the normal. The usual amount of fall seeding has been done and is in fair condition. Onions are a three-fourths crop. Potatoes are a little below the normal in yield and of good quality. Root crops and late market-garden crops are doing well. Apples 50 per cent of a normal crop; pears 25; peaches 90; grapes 85; cranberries 75. No damage from frost. We are very dry, certainly drier than for 25 years and some say 50 years.

Hampden (JOHN N. ISHAM). — Corn is a full normal crop. The rowen crop is short, but fall feed is in good condition. About the usual amount of fall seeding has been done, but it is starting slowly and unevenly. The onion crop is short and the onions of small size. Potatoes were checked in growth by the drought. Root crops are good, but hardly average. Apples, pears and peaches are fair; grapes and cranberries short. No frosts to injure crops. Most crops are prepared for frost, except ensilage corn, which is being rapidly put in the silos.

Palmer (O. P. ALLEN). — Indian corn compares very favorably with the normal. Rowen and fall feed are not up to the usual average. About the usual amount of fall seeding has been done, but will need considerable rain to bring it up to the average. Potatoes are not quite normal in yield, but are of good quality. The prospect for root crops and late market-garden crops is very favorable. Fruit of all kinds is better than was expected and of good quality. No damage from frost to speak of.

WORCESTER COUNTY.

Brookfield (F. E. PROUTY). — Indian corn is about an average crop. Rowen and fall feed are not more than half the usual average. About the usual amount of fall seeding has been done and is in good condition.

Potatoes are uneven, some fields being quite good and others not worth harvesting. Root crops and late market-garden crops are little raised. Apples are about half a crop; pears and peaches average; grapes good.

West Brookfield (MYRON A. RICHARDSON). — Corn will be an average crop, but is two weeks late in ripening. There will be only a small amount of rowen harvested and fall feed is below the average. The usual amount of fall seeding has been done and is looking finely. The potato crop is good in quality, but lacking in quantity. Apples are a normal crop, taking this section as a whole. No frosts to do damage as yet.

New Braintree (CHARLES D. SAGE). — Some fields of corn are very good, but on an average it is a three-fourths crop. Very little rowen will be gathered; fall feed fair, but not as good as usual. Very little fall seeding has been done. Early potatoes were a poor crop; later ones not harvested yet. Root crops and late market-garden crops are little grown. Apples half a crop; pears 100; peaches 50; grapes 60. No frost to date. Drought injured the hay crop and pastures and cows have not done well so far this season.

Oakham (JESSE ALLEN). — Indian corn is a full average crop except where injured by the hail storm of August 2. There is very little rowen, but fall feed is in excellent condition. The usual amount of fall seeding has been done and it looks well. Potatoes are about half a crop, but are rotting badly. Root crops and late market-garden crops are very little raised. Fruits are a fair crop, but greatly injured by hail. No damage from frost.

Royalston (C. A. STIMSON). — Corn is a two-thirds crop. Rowen and fall feed are below the usual average owing to drought. Less than the usual amount of fall seeding has been done because of dry weather. Potatoes are about a normal crop. Root crops and late market-garden crops show about two-thirds yields. Apples a three-fourths crop; pears a full crop; grapes fair; no peaches or cranberries. No damage from frosts to date.

Ashburnham (E. D. GIBSON). — Indian corn is an average crop, but matures very slowly. Rowen and fall feed are not up to the usual average owing to dry weather. Very little fall seeding has been done, the ground being too dry to plow well. Late potatoes promise a fair crop, though few have been dug and there is considerable rot. Apples, pears and peaches fair; grapes late; cranberries late and small. Farmers are filling their silos with a good quality of well eared ensilage. No frost as yet.

Princeton (A. O. TYLER). — Indian corn is about three-fourths of a normal crop. There is very little rowen, but fall feed is fair. Not as much fall seeding as usual has been done, but what has been put in looks well. Potatoes are a two-thirds crop of good quality. The prospect is good for root crops and late market-garden crops. Apples are a good crop, but of small size; pears and peaches good; not many

grapes. Frost on the night of September 22, but no special damage to crops.

Bolton (H. F. HAYNES). — Rowen and fall feed are average. About the usual amount of fall seeding has been done, but it is late. Potatoes are few in the hill, but of good size and quality. Root crops and late market-garden crops are not very good, owing to drought. Apples and other fruits give small yields. Light frost on the night of September 22, but little damage to crops.

Lunenburg (A. W. Rockwood). — Indian corn is above an average crop. Rowen and fall feed are up to the usual average. Less than the usual amount of fall seeding has been done, owing to the abundance of rowen. Onions are less than a normal crop. Potatoes are a normal crop, but show some rot. The prospect is excellent for root crops and late market-garden crops. Peaches are scarce; pears and grapes fair; Baldwin apples look good quality with a normal crop. There was a moderate frost on September 23.

Northborough (JOHN K. MILLS). — Corn will be a good crop. There is a very good crop of rowen. The usual amount of fall seeding has been done and it is starting well. Onions have not done well and the crop will be light. Potatoes are rather a light crop. Root crops and late market-garden crops are growing nicely and will give good crops. There will not be over half a crop of any kind of fruit.

Southborough (E. F. COLLINS). — Indian corn is a full crop. Rowen is about half a crop, but fall feed is in good condition. Not as much fall seeding has been done as usual, but it is looking well. Onions are an average crop. Some fields of potatoes were light and others good. Apples are an average crop and grapes good. No frost as yet.

Leicester (H. H. KINGSBURY). — Indian corn is normal, but late in ripening. Pasturage is very short; some fields have produced a good crop of rowen. The amount of fall seeding put in is less than usual, but it is growing finely. Potatoes are of very good quality; yield 75 per cent, with rot in places. Celery, cabbage and turnips promise good yields. Apples, pears and grapes are normal crops. There has been no injury from frost.

Auburn (Wm. GILBERT). — Indian corn is a normal crop. Rowen is about half a crop, owing to dry weather. There has been the usual amount of fall seeding done and it is looking well. There will be a normal crop of onions. Late potatoes are a good crop and of good quality. Late market-garden crops are looking well. Apples and grapes are about half crops. There was a frost on low lands September 15.

Sutton (J. E. GIFFORD). — Corn is a normal crop. Rowen and fall feed are up to the average of the last five years. Not much fall seeding has been done. Potatoes are possibly 60 per cent of a full crop, but are of good quality. Late market-garden crops are looking fairly well. Apples are 90 per cent of a full crop; pears 85 per cent; peaches 65 per cent. No damage from frost as yet.

MIDDLESEX COUNTY.

Holliston (A. W. LITTLEFIELD). — Indian corn is a good crop. Rowen and fall feed are far below the usual average. Less than the usual amount of fall seeding has been done, and that put in is starting slowly because of dry weather. Onions are a fair crop. Potatoes are a normal crop in yield and quality as far as harvested. Root crops are about half crops, also celery, owing to lack of rain for starting them. All fruits except apples are the shortest for years; apples are a large crop. No damage from frost as yet. The dry weather has injured our crops, except late market-garden and root crops, very little.

Hopkinton (W. V. THOMPSON). — Corn is late because of dry weather, but averages normal at this time. Rowen and fall feed are not up to the usual average. A great amount of fall seeding has been done and it looks well. Potatoes are hardly normal, owing to damage by late spring frosts. Apples are not up to the standard for apple year, but a pretty good crop; pears plenty and good; grapes good and plentiful. Four very slight frosts, August 27, September 3 and two about September 10, but very little damage to crops.

Marlborough (E. D. HOWE). — Indian corn is about 90 per cent of a normal crop. Rowen and fall feed are not up to the usual average. The usual amount of fall seeding has not been done as it has been too dry. Onions are a three-fourths crop. Potatoes are 75 per cent in yield and 90 per cent in quality. Apples half a crop, but selling well; pears 80; peaches 25; grapes 90. No frost as yet.

Maynard (L. H. MAYNARD). — Indian corn is about normal in yield and quality. Rowen is good on low lands, but poor on high land, because of drought. Considerable fall seeding has been done in this section and its condition is good. The onion crop is about normal. Potatoes are an average crop in yield and quality. Market-garden crops all promise well. Apples are about 75 per cent in yield and many are of poor quality; other fruits about average. No damage to crops from frost as yet. Silo corn is an unusually good crop.

Townsend (G. A. WILDER). — The corn crop was affected by drought and is below normal. Rowen and fall feed are up to the usual average. The usual amount of fall seeding has been done and is in good condition. Onions are an average crop. Potatoes are good in yield and quality. Root crops and late market-garden crops promise average yields. Fruits of all kinds are fair crops. No serious damage to crops has been done by frost.

Billerica (E. F. DICKINSON). — Indian corn is late, but about an average crop. Rowen is hardly half a crop and fall feed is below average in condition. The usual amount of fall seeding has been done and the recent showers have caused it to germinate well. Onions are a two-thirds crop. Potatoes are below average in yield, but of

good quality. Root crops and late market-garden crops promise medium yields. Apples are a two-thirds crop; pears full; peaches light; cranberries light. No rains have fallen to reach the springs during the entire summer, and wells and springs are very low.

Tewksbury (G. E. CROSBY). — Indian corn is a two-thirds crop. There is very little rowen and fall feed is light. But little fall seeding has been done. Onions are from one-half to three-fourths of a normal crop. Potatoes are light in yield and fair in quality. The prospect is fair for root crops and late market-garden crops. Apples are a good crop where the trees were sprayed; few pears or peaches. No damage from frost to speak of.

Lexington (HOWARD M. MUNROE). — Corn is not up to the normal, some fields extra good, others poor. There is very little rowen and fall feed is light. But little fall seeding has been done, and that put in needs rain. Onions are small and the crop below normal. Potatoes are about an average crop, with no rot. Roots and celery will be light crops. Early apples are an extra good crop; late apples about normal; pears and grapes below normal. The tomato crop was injured by dry rot and blight. Squashes are a rather light crop of extra good quality. Carrots are a light crop. No frost yet to do damage.

Winchester (S. S. SYMMES). — Rowen and fall feed are very much below the average. Some fall seeding has been done, but the ground was too dry for it to germinate. Onions are very small. Potatoes are rather small but of good quality. The prospect for root crops and late market-garden crops is very poor, celery being especially small. Apples and pears dropped a good deal. The ground is dry to a depth of several feet; springs and brooks are totally dry. Apples and peaches colored finely and are of good quality. Squashes are the poorest crop in many years.

Weston (HENRY L. BROWN). — Indian corn is not much grown. There is little rowen and fall feed is short. The usual amount of fall seeding has not been done, owing to dry weather. Potatoes are a fairly good yield and of good quality, but the acreage is much decreased. There will be a fair yield of roots; too dry for celery to do well. Fall apples have been abundant, but small; no peaches; black mould or fungous on pears affects the growth of the fruit, which is small. No frost as yet.

ESSEX COUNTY.

Salisbury (WESLEY PETTENGILL). — Indian corn is looking well except a small part of the crop on very high ground. Rowen and fall feed are light except on newly seeded fields. The ground has been and is now so dry that but little fall seeding has been done. Early potatoes show a light yield, late potatoes good crop; quality good, no rot. It is rather dry for most late market-garden crops. Winter

apples rather light; pears plenty; peaches light; grapes fair. No frost to do any damage.

Groveland (A. S. LONGFELLOW). — Indian corn is a good crop, but late in ripening. Less than the usual amount of rowen. Some fall seeding has been done and it is in good condition. Yield of potatoes quite good, but there is some complaint of rot. Late market-garden crops promise well. There will be half a crop of apples, many pears and some peaches. There is no injury from frost.

North Andover (PETER HOLT). — Corn is a fair crop but late. Rowen and fall feed are not up to the usual average. Less than the usual amount of fall seeding has been done, on account of dry weather. Onions are a very poor crop. Potatoes are a fair yield of good quality. All late market-garden crops have suffered from drought. Apples, pears, peaches and grapes good; cranberries a failure.

Topsfield (B. P. PIKE). — Indian corn is about an average crop but late. Rowen and fall feed are very short. Less than the usual amount of fall seeding has been done, owing to dry weather. Potatoes are a short crop and not up to the normal in quality. It has been too dry for root crops and late market-garden crops. Some apple orchards show full crops, others short; no cranberries; few grapes. No damage from frost.

Wenham (N. P. PERKINS). — Corn is not much grown, but about a two-thirds crop. Rowen is not up to the average. Not much fall seeding has been done, but about the usual area will be sown during the next two weeks. As a rule the onion crop will be light. There is a fair yield of potatoes and the quality is good. All root crops need rain and at present are at a standstill. Apples about half a crop; pears good; grapes and cranberries light. Cabbages, carrots and parsnips will grow for some time if the needed rain comes soon. Squashes are about all harvested and beets are about through growing. No frost except a little on low land.

Danvers (CHAS. H. PRESTON). — Indian corn is an average crop. Rowen is not over a fourth of a normal crop and fall feed is light. The usual amount of fall seeding has been done, but it is light owing to dry weather. Potatoes are a two-thirds crop of good quality. The prospect is fair for root crops and late market-garden crops. Apples are good in spots; pears and peaches good; grapes good.

NORFOLK COUNTY.

Cohasset (ELLERY C. BATES). — Indian corn is a good crop. Rowen and fall feed are up to the usual average. Fall seeding is in good condition. The onion crop is below the normal. Potatoes are a good crop of good quality. The prospect is good for root crops and late market-garden crops. Fruit has turned out fairly well. No injury from frost.

Randolph (RUFUS A. THAYER). — Corn is about a three-fourths

crop and is ripening well. There is little rowen, except on moist land. Very little fall seeding has been done as yet. Onions are a light crop on dry land and good on moist land. Root crops and late market-garden crops are all growing well at present. Apples not harvested; pears good; peaches poor; grapes poor. No frost as yet. We have had little rain and pastures have suffered and early crops were much injured; the ground is now very hard and dry.

Walpole (EDWARD L. SHEPARD). — Indian corn is about 80 per cent of a normal crop. Rowen and fall feed are not up to the usual average. About the usual amount of fall seeding has been done, but is somewhat backward on account of drought. Potatoes are about a normal crop. The prospect for root crops and late market-garden crops is fairly good considering the dry weather. Apples are about normal; other fruits quite a little below the normal. No frost as yet to do much damage.

Millis (E. F. RICHARDSON). — Corn is a normal crop. Rowen and fall feed are not up to the usual average. Less than the usual amount of fall seeding has been done and dry weather has retarded that which has been sown. Potatoes are above the average in both yield and quality. Pears and apples are good crops; other fruit short. Dry weather has injured root crops and late market-garden crops. There was a slight frost September 23 on low land.

Franklin (C. M. ALLEN). — Indian corn is not a normal crop. Rowen is very light. Very little fall seeding has been done, as it has been very dry. Potatoes are a light crop. Root crops and late market-garden crops will be very light, owing to drought. All fruits are more or less cut short by drought. Streams are lower than for years and our farmers are looking on the dark side. No frost to date.

Foxborough (WILLIAM E. PERKINS). — Indian corn is about a two-thirds crop. Rowen and fall feed are not up to the usual average. The usual amount of fall seeding has been done. Potatoes are a light yield of good quality. The prospect for root crops and late market-garden crops is poor. Fruit of all kinds shows light yields. Some cranberries were injured by a light frost on September 12.

BRISTOL COUNTY.

Easton (Wm. N. HOWARD). — Corn compares favorably with the normal, season extra good for ripening. On low lands rowen and fall feed are good and on high lands very poor. The usual amount of fall seeding has been done and looks well. Onions not grown commercially, but small and light. Potatoes are a fair crop, but the quality is nothing extra and there is some rot. The prospect is fair for root crops and late market-garden crops; cabbages and turnips need rain. Apples light; pears fair; cranberries light. Squashes are a medium crop. No frost as yet.

Attleborough (ISAAC ALGER). — Indian corn is above the average. There is no rowen, but fall feed is about average. Not much fall seeding has been done. Potatoes are a fair yield of good quality. The prospect is good for root crops, celery and other late market-garden crops. Fruit has turned out poorly. No frost as yet.

Mansfield (E. JASPER FISHER). — Indian corn is somewhat above the average. There is not much rowen, but fall feed is fairly good. About the usual amount of fall seeding has been done and looks well. Potatoes are below the normal in yield, but of good quality. The prospect is very good for root crops and late market-garden crops. Fruit of all kinds is very poor. There have been some frosts, but no damage to crops.

Dighton (HOWARD C. BRIGGS). — Corn is an average crop. Rowen and fall feed are up to the usual average. The usual amount of fall seeding has been done and is in good condition. Onions are nearly a failure. Potatoes are a small yield, but of good quality. The prospect is fair for root crops, celery and other late market-garden crops. There is a small yield of fruit; cranberries not grown. Potatoes have rotted badly. Light frosts, but not much damage.

Seckonk (JOHN W. PECK). — Indian corn is a three-fourths crop; little raised for grain. Rowen is an average crop, being heavy on low land. There has been very little fall seeding, many preferring October, but that put in looks fairly well. Onions are not nearly up to the average. Potatoes are about an average crop in yield and quality. Root crops are generally good; celery blighted badly and the late crop is not growing well. Some apple orchards are very good, others very poor; cranberries not grown to any extent. Late crops are much in need of rain. No frost as yet.

Acushnet (M. S. DOUGLAS). — Corn is a better crop than for five years. Rowen and fall feed are above the average. More seeding has been done than usual and is now in good condition. Onions are not up to the normal. Potatoes are more than an average crop of good quality, though affected by blight. Root crops are good; celery is looking finely; turnips never looked better. Very few apples; pears, peaches, grapes and cranberries fair. Beans and cabbages are doing remarkably well. We have had a good season, with plenty of showers. No frost as yet.

PLYMOUTH COUNTY.

Hanover (HARRISON L. HOUSE). — Indian corn is a normal crop. Rowen and fall feed are rather short. The usual amount of fall seeding has been done and is in fair condition. Onions are a normal crop. Potatoes are above the normal in yield and quality. The prospect is good for root crops and late market-garden crops. Apples fair; pears good; peaches very few; grapes fair; cranberries fair. No frost as yet.

Brockton (DAVIS COPELAND). — Corn is 80 per cent of a normal crop. Rowen and fall feed are not up to the usual average. The usual amount of fall seeding has been done and some fields are looking well, but others have not started, owing to dry weather. Onions are a small crop. Potatoes are a three-fourths crop. Unless we get rain soon root crops and late market-garden crops will be short. Some apple orchards are loaded with fruit and others are not. No frost as yet.

Plympton (WINTHROP FILLEBROWN). — The corn crop is better and larger than for several years. Rowen and fall feed are deficient, owing to drought. The usual amount of fall seeding has been done and is looking fairly well. The potato crop is good in quality and amount. All root crops have done well except beets. Fruits are deficient, but cranberries have done well. There have been several frosts, the most severe on September 3.

Kingston (GEORGE L. CHURCHILL). — Indian corn is about a two-thirds crop. Rowen and fall feed are not up to the average. No fall seeding has been done as yet. Onions are not an average crop. Potatoes are very good in quality, but not in yield. The prospect is fair for root crops and late market-garden crops. Apples are scarce; pears a good crop; peaches fair; cranberries good. The weather has been quite good for harvesting for the past month. No damage from frost as yet.

Carver (J. A. VAUGHAN). — Indian corn is a good crop. Rowen and fall feed are up to the usual average. Fall seeding is in good condition. Potatoes are good in yield and quality. There are but few apples and pears. There appears to be an average yield of cranberries, with but little damage from frost as yet, and the crop is about half gathered.

Wareham (A. B. SAVARY). — Corn is a normal crop. Rowen and fall feed are normal. Very little seeding has been done, but that which has been put in looks well. Onions are a normal crop. Early potatoes were light, but late ones are better. The prospect is for average crops of roots and late market-garden stuff. Roots of all kinds made only light yields. There has been no injury from frost.

Rochester (GEO. H. RANDALL). — Indian corn is fully up to the normal. Rowen and fall feed are up to the average. Very little fall seeding has been done, but it is starting well. Onions are below the normal. Potatoes are above the normal and of good quality. The prospect is good for all late crops. Late potatoes are rotting badly in some places. Cranberries are below early estimates; very few apples; other fruits generally light. No damage from frost as yet.

BARNSTABLE COUNTY.

Bourne (DAVID D. NYE). — Indian corn compares favorably with a normal crop. Rowen and fall feed are up to the usual average. Very little fall seeding has been done. Potatoes are about a three-fourths crop. Root crops and late market-garden crops are little raised. Very few apples; few pears; grapes light; cranberries a two-thirds crop, being cut by frost in the spring. No damage from frost this month.

Mashpee (W. F. HAMMOND). — Indian corn is above the average. Fall feed and rowen are about average. Fall seeding is looking better than usual. Onions are below the average. The potato crop is above the average in yield and quality. Late market-garden crops are above the average. Apples, pears, peaches and grapes are a failure; cranberries half a crop. Frost in August damaged the gardens and cranberry bogs.

Barnstable (JOHN BURSLEY). — Corn is 10 per cent above the normal. Rowen and fall feed are up to the usual average. The usual amount of fall seeding has been done and is looking well. Potatoes are hardly an average yield, but are of fine quality. Cape turnips are growing finely. Apples, pears, peaches and grapes very light; cranberries less than average.

Dennis (JOSHUA CROWELL). — Corn is rather above the normal. Rowen and fall feed are much better than usual. There is very little fall seeding done in this section. Onions are much less than a normal crop. Potatoes are a normal yield of good quality, but with some rot. Root crops and late market-garden crops promise to be about average. Cranberries are about half a crop; all other fruits scarce. There was a very little damage from frost on September 24.

Wellfleet (E. S. JACOBS). — Indian corn is about the same as last season. The same amount of fall seeding has been done as last year, with very promising results. Onions are above the average, though only a limited amount is planted. More potatoes are raised than formerly, with better results. All root crops are above the average, and celery is especially fine. Apples, pears, peaches and grapes are all failures. The cranberry crop will be the largest for many years, very poor bogs yielding 50 barrels to the acre.

Truro (JOHN B. DYER). — Indian corn is probably above the average. Rowen and fall feed are up to the usual average, owing to late rains. The usual amount of fall seeding has been done and is in average condition. Onions are little raised, but are an average crop. Potatoes seem to be above the average. The prospect is good for root crops and late market-garden crops. Melons have grown unusually well. Apples are a failure; cranberries an average crop. Very little injury from frost.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE). — Indian corn is about a normal crop. Rowen and fall feed are above the average. Potatoes are about normal in yield, but below in quality, with some rot. The prospect is fair for root crops and late market-garden crops. Apples, pears, peaches and grapes are poor crops; cranberries fair. No damage from frost as yet.

NANTUCKET COUNTY.

Nantucket (H. G. WORTH). — Corn is better than for several years. Rowen and fall feed were never better. Not much fall seeding is done here. Quality of potatoes good, but yield below normal. Root crops are in fine condition; no late market-garden crops grown. No fruit is raised in this county. Cranberries are a bumper crop. No frost to date.

BULLETIN OF MASSACHUSETTS BOARD OF AGRICULTURE.

QUINCE CULTURE.

By PROF. F. C. SEARS, *Professor of Pomology, Massachusetts Agricultural College.*

The following notes on quince culture are given in response to a request from the secretary of the State Board of Agriculture for something on the subject which might be sent out to residents of the State from whom inquiries are frequently received for information as to this fruit. It is not supposed that the industry will ever grow to large proportions in Massachusetts. In fact, from the very nature of the fruit and its uses there can never be more than a very moderate demand for it. But as a part of the home fruit plantation, or as a modest part of the commercial orchard, it is certainly deserving of more attention than it has received in the past. In fact, even when they are planted, quince trees seem to be more systematically neglected than other fruits, which is certainly stating the case strongly.

As every one knows, the quince never makes more than a large bush or a very small tree, 15 feet being the extreme for height, so that they may readily be included in even a small plantation of fruits. And while, as ordinarily seen, the tree is straggling and unkempt, owing to lack of care, yet when given a little intelligent attention, particularly as to pruning, it makes an attractive little tree; and when it is in full bloom very few fruit trees are more beautiful. The blossoms are large and snowy white, shaded with a delicate pink, and would make an attractive sight at any time, but, coming as they do, when other fruits are out of bloom, they seem doubly beautiful.

As an article of diet the quince takes a high position, and deserves far more general use than it receives. Quince marmalade and quince preserves recall to every one's mind his grandmother's fruit closet; and while preserves are not indispensable, like flour and sugar and tobacco, yet in case of unexpected guests a well-stocked fruit closet brings a feeling of security. We shall have more to say on the uses of the quince in a later paragraph. Just now we merely wish to establish the principle that the quince is worthy of wider use than it at present receives.

SOILS AND FERTILIZERS.

In the choice of a spot in which to grow quinces, one is usually very much restricted, since they generally form a small and relatively unimportant part of the home fruit plantation, which is located only with regard to its convenience from the house. Yet if one is allowed a choice, as is usually the case when one is setting a really commercial plantation, soils, windbreaks, exposures, etc., may all be considered.

I do not think the quince is an exacting fruit as to soils. Certainly we have all seen it growing on a great variety of soils with excellent success (when one considers the utter neglect to which it is generally subjected). I recall, in particular, a row of old quince trees growing along a roadside in decidedly sandy soil which have year after year given a crop of fruit. I will not say it was a good crop or that it was good fruit, but considering their handicap these old trees did wonders, so no one need give up having quince marmalade because the soil is sandy. Yet most authorities agree, and the writer's observations tally therewith, that the ideal quince soil is a reasonably heavy clay loam, which is sufficiently well drained so that the water does not stand either in or upon the soil, and yet which is of such a nature and has been handled in such a way as to make it retentive of moisture. This may seem a somewhat difficult combination of characters to secure, but it is not unreasonably so. A good clay loam which has not too retentive a subsoil will give the first requisites. If the subsoil is heavy, then the land should be tile-drained; and of course the lay of the land should be such as to allow surface water to drain off. It only remains to keep up a good supply of humus in the soil and to cultivate the land instead of allowing the trees to stand in sod, as is usually done. Both these are of prime importance in getting the water into the soil and in holding it there. Of course, quinces will do *something* in sod; that has been too abundantly proved in Massachusetts to be disputed, for about all the quinces we grow are produced in that way; but with the soil requirements suggested, every one (except possibly the extreme sod crank) will agree that cultivation is by all means the best method of soil management, since it allows incorporating plenty of humus in the soil and keeping up the earth mulch to prevent evaporation.

With a soil such as we have selected, and with the treatment we have suggested (cultivation and cover crops), I do not believe any application of nitrogen will be necessary after the first two years. For these two years I have found that an ounce of nitrate of soda to each tree will give all the growth necessary, even in decidedly poor soil. This should be scattered about the trees as soon as growth gets fairly under way in the spring. The first year it ought to cover a circle with a diameter of say three feet (the tree of course being the center of the circle), and the second year a circle perhaps five feet in diameter.

Potash and phosphoric acid may be used much more liberally with young trees just set. A $\frac{1}{2}$ pound of a mixture made up of 3 pounds of high-grade sulphate of potash and 5 pounds of acid phosphate will give excellent results, and this may be gradually increased (always having due regard to the way the trees respond) till at full bearing the orchard may get from 100 to 250 pounds of potash and from 200 to 500 pounds of the phosphate, though for bearing trees I should use, at least part of the time, basic slag meal as a source of phosphoric acid instead of the acid phosphate.

VARIETIES.

Compared with other fruits there are very few varieties of quinces, and, indeed, of these few a very small percentage is really of any particular value. Thomas lists 14 varieties in his "Fruit Culturist," and Budd and Hansen give 17 in their "Horticultural Manual." Out of this number only 4 or 5 have reached commercial importance over any extent of the United States.

The varieties which seem to me to be of sufficient value, or to have been sufficiently tested, to warrant one in including them in a list for planting in Massachusetts, are as follows:—

Orange or Apple.—This variety, of European origin, is one of the oldest and best known, and is often recommended as the only commercial sort for Massachusetts. I do not quite endorse this view, but it is certainly the leading variety. The chief objection to it is that it has been so long propagated, often by seeds, that several strains have been developed, some of which are not very valuable. The tree is fairly vigorous and spreading in its growth. The fruit is variable, as suggested above, but is typically rounded, not pear shaped and with distinct flattening at the ends. The color is fine golden and the surface not unduly fuzzy. It ripens about October, but will often keep in good condition up to midwinter. The flesh is firm, but cooks up tender and soft.

Champion.—This is an American variety, having originated in Connecticut. The tree is a vigorous grower, being more upright and taller than the Orange, and the fruit matures somewhat later than that variety; in fact, in some localities it does not ripen well. The fruit is large and very distinctly pear shaped, with tender flesh and delicate flavor. This would certainly stand next to the Orange in popularity.

Rea, or Rea's Mammoth.—This variety makes a small tree, but the fruit is large, sometimes very large, distinctly and abruptly pear shaped, a rich orange in color and with a very smooth skin. The flesh is of excellent quality, and the fruit is ready for use earlier than most other sorts.

Meech or Meech's Prolific.—This variety also originated in Connecticut, and resembles the Orange considerably. The fruit is usually obscurely pyriform in shape, of a fine orange color, very fragrant, and of fine quality.

A fifth variety which might be added, though the writer has little personal knowledge of it, is the Bourgeat. This was recently imported from France and has given excellent results in some places. Mr. E. C. Howard of Belchertown, in particular, has been much pleased with it.

SELECTING TREES AND PLANTING OUT.

In the choice of nursery stock most growers select quince trees two or three years old. The writer would never go over two years, and would even prefer strong one-year trees. The arguments are the same as with any other fruit trees. The younger tree is apt to be less disturbed by transplanting and to take hold better for this reason. One is apt to get better stock in one-year trees, since only the best and most vigorous trees reach saleable size at that age. And, above all, it allows one to head the tree low, which is certainly the only way to head quinces. Among the larger tree fruits there may be some question on this point, at least there is room for argument, but the quince is at best not much more than a shrub, so that the familiar argument of wanting to get the team up under the branches will not apply. In the writer's opinion 12 inches is plenty high enough to head a quince. If one-year stock is used the tree may be simply cut off at this point and allowed to form a head from new branches sent out below this.

As to distance apart, authorities differ, but from 10 to 15 feet is usually recommended. With repressive pruning (heading in each year's long, straggling growth) it will certainly be many years before quinces will crowd each other even at 10 feet, and that is the distance which the writer has generally adopted.

In the setting of the trees no special treatment is necessary. I believe that fall setting might perhaps be justified here more often than with other fruits, for the reason that the ideal quince soil being on the moist side is apt not to be ready for planting as early in the spring as some others. My own belief is that very early spring setting is the best for almost any fruit trees, and that next to this is very late fall setting. The trees ought to be set at least a couple of inches deeper than they stood in the nursery, since the quince is naturally a shallow-rooted tree and the roots will tend to work up nearer the surface. After setting, clean cultivation should be practiced. As in most other phases of the care of the quince, there are no special reasons for this farther than the one already suggested, that the quince thrives best under comparatively moist soil conditions. And, for the same reason, in selecting a cover-crop choose one which makes a good growth, like buckwheat or barley, or, for a nitrogenous cover-crop, vetch or soy beans. This should be sown the middle or last of July.

FRUIT-BEARING AND PRUNING.

The method of bearing fruit, in the quince, is one of the most interesting and unusual among all the tree fruits. There are no winter fruit buds as in most other fruits, but each spring the lateral buds on

the shoots of the previous year's growth send out new shoots, and after these shoots have grown for a few inches (usually from 3 to 6) a single blossom is produced on the end of the shoot. This, of course, temporarily stops the growth in that direction, and if the blossom sets



FIG. 1.—Young quince tree, just coming into bearing, showing few long shoots.

a fruit there is no further growth at this point for the season. If it does *not* set fruit, however, one of the lateral buds on the shoot will frequently start into growth and continue the lengthening of the

branch, sometimes for a foot or more. All this means that on those branches where a quince tree sets fruit its yearly growth is very slight indeed, and if it bears abundantly, the tree will present a rounded top, looking almost as though it had been sheared, as in the case of the

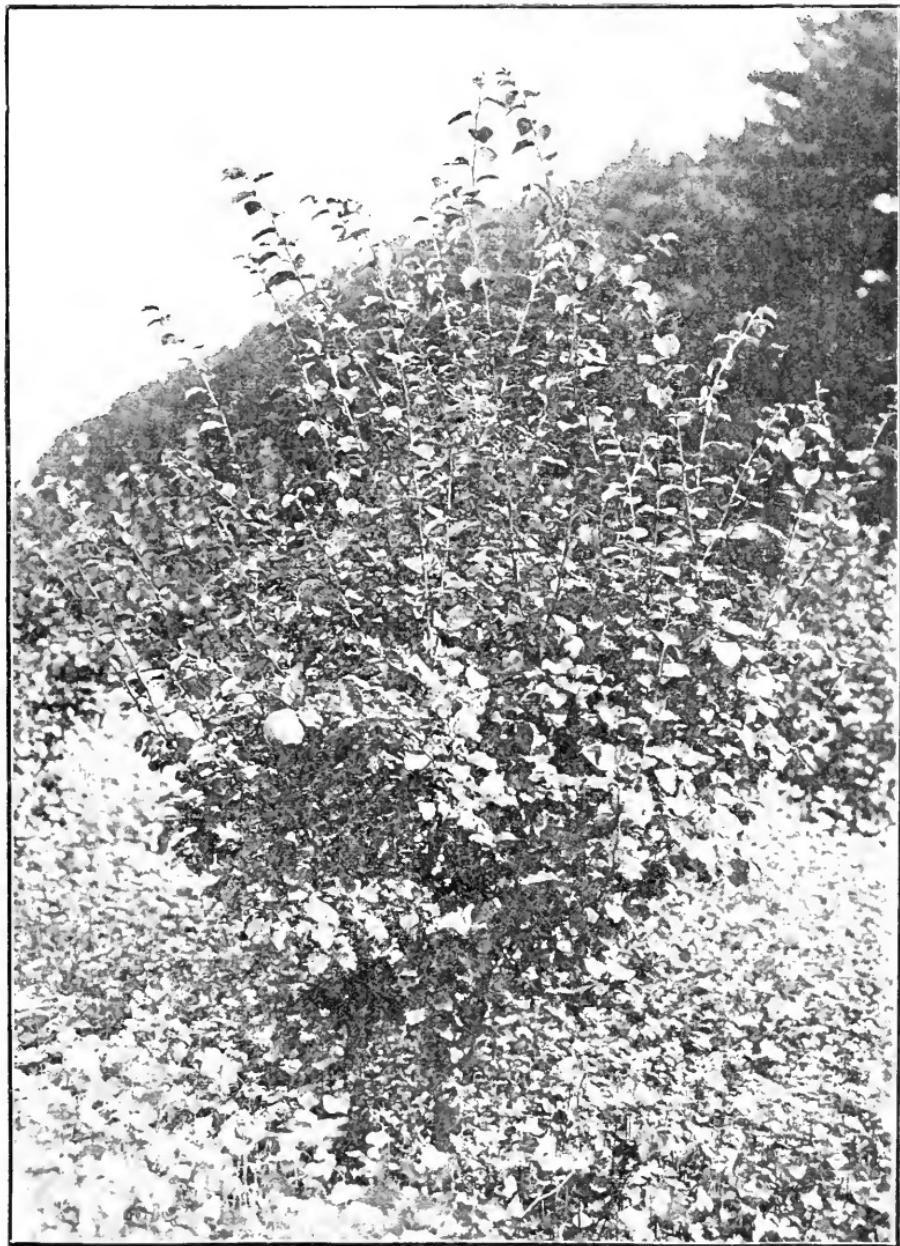


FIG. 2.—Young quince tree, not yet in bearing, showing long terminal shoots, which need heading in.

tree in Fig. 1. Whereas, if the tree sets little fruit, a young tree in particular may make a long, spreading growth, which will give it the appearance shown in Fig. 2.

We are now in position to consider the matter of pruning, which is chiefly concerned with keeping the tree from growing ragged and out of shape, as it will most certainly do if neglected, and in keeping up a supply of thrifty one-year-old wood from which the bearing shoots may start each spring. As in other fruits, the main pruning may be done at almost any part of the dormant season, but preferably about March, and a good pair of hand shears such as are used in grape pruning is all that is necessary for practically all of the work. The first operation is to shorten in the long terminal shoots, shown in Fig. 2, and unless there is special reason for wanting the tree to enlarge, these may be cut back from two-thirds to three-fourths of their growth, or even cut out altogether in some cases. The next operation is to go through the tree and thin out the entire top. The severity of this thinning will depend altogether on the previous treatment of the tree. If it has been neglected, it may be necessary to remove a large amount of wood, so as to induce an abundant new growth; while if it has been well cared for, there may be only here and there a crowding branch to remove. In any case, experience (either one's own or that of another) is the only sure guide. But the aim ought to be to keep the head sufficiently open so that the center of the tree may not become "blind," or devoid of one-year wood. As compared with other fruits, however, the quince may be allowed to form rather a thick top, since it never attains large size and consequently the sun and air will penetrate to the center of the tree through a thicker top.

INSECTS AND FUNGOUS PESTS.

The quince is really troubled with very few insect or fungous enemies in well-kept orchards. Of course the neglected and rundown trees, which are the too common rule, are likely to be attacked in various ways, but where trees are given anything like modern treatment the number of enemies is relatively very small. Even deer, the newest and worst enemy of apple orchards in Massachusetts (worst because protected by the State), are said not to browse on quince trees.

Among fungous troubles, by all means the most important and most common here in Massachusetts are the quince rust and the leaf blight or fruit spot. Of these two, according to the writer's observation, the rust is much more common, but when the leaf blight does occur it is apt to do much more damage. The rust attacks both the fruit and the twigs, and at a certain stage, particularly on the fruit, it produces long, thread-like growths over the surface of the affected parts, which are orange in color and very conspicuous. On the twigs it produces knots not unlike the black knot of the plum, though without the even pimply appearance of surface which the plum knots have. Frequently the fungus works entirely around the branch, causing it to break off. The fungus causing this disease is one of those curious forms which have two stages of growth. One is the disease of the quince

we are discussing, and the other is found upon cedar trees. The treatment would therefor be to destroy affected cedar trees, at least those near the quince orchard, and to cut off and burn the affected parts of the quince, whether fruit or twigs. Then, in addition, thorough spraying with Bordeaux mixture will usually hold it in check. The writer has found that an application early in the spring, shortly after the leaves appear, a second one just before blossoming, and a third just after the blossoms fall will usually almost completely protect the orchard.

The second disease, the leaf blight or fruit spot, is, as I have said, likely to be more serious than the rust when it does occur. It produces on the leaves small dots, red-brown in color and circular in outline, which may coalesce so as to form larger irregular spots. In severe cases the leaves turn yellow and drop off, sometimes leaving the trees entirely bare by the last of August. On the fruit it shows as dark-brown sunken areas scattered over the surface. Fortunately, this disease, though serious when allowed to go untreated, is fairly easily controlled by sprayings, and practically the same sprayings given for the rust will give satisfactory results with this disease.

Among insects there are three which deserve to be mentioned: the codling moth, the borer and the cureulio. The codling moth is the same fellow who produces the "wormy" apple, and is to be fought in the same way, viz., by adding arsenate of lead or Paris green to the Bordeaux used just after the blossoms fall. Paris green should be used at the rate of 6 ounces to 50 gallons of Bordeaux, and arsenate of lead at 3 to 4 pounds to the same amount of Bordeaux.

Borers are usually not troublesome in cultivated orchards, but the trees should be watched, and when they are attacked the borers must be dug out, or a wire run into the burrow till the insect is reached. In sections where borers are likely to be troublesome the trees ought to be examined in late spring and early fall, particularly just at the surface of the ground. This will usually be entirely effective in keeping them down.

The last insect is the cureulio, which attacks the fruit in much the same way that the apple is attacked, though it is by no means as common an enemy. These insects may usually be controlled somewhat by spraying, just before the blossoms open, with Paris green or arsenate of lead, as outlined for the codling moth. But the surest way to get rid of them is to jar them on to a sheet spread under the tree. This is a slow and tedious method, but one which is practiced by many commercial growers.

PICKING AND MARKETING.

Quince trees ought to begin to bear by the fourth or fifth year and should reach full bearing by ten years. The life of the orchard of course depends on the care it receives, but some of the commercial

orchards of New York have remained healthy and productive for forty years.

While the quince is a firm, hard fruit, it is easily bruised, and such damages show up very plainly. It ought therefore to be handled with care, from the time it is picked till placed upon the market. If picked directly into half-bushel baskets, and carried in these to the storage house, the bruising is perhaps as little as possible. For market they may be packed in almost anything, from a grape basket to a barrel. Where one can reach the retailer direct, large-sized grape baskets are excellent, but barrels and half barrels are frequently used. Practically the same arguments apply to the different packages as apply to apples.

USES.

Like a great many other good things quinees are not used as generally as they ought to be. It is not the design of these notes to say all that might be said on any phase of the subject, but it does seem that a few suggestions as to some of the more common ways of serving quinees would be in order. The writer can personally recommend the following receipts. He cannot say that he has tried them all, but he has tried the "results" and knows that they are good. They are taken from various reliable cook books.

As quinces are of such a strong flavor, a few of them will make a large quantity of delicious marmalade, jelly and preserves by using apples in combination with them. The quinees should be cooked in water until soft *before* adding sugar, for if sugar is added when cooking begins, the quinees will become hard.

Canned Quinees. — Pare and core quinees and an equal quantity of sweet apples. Use one third the weight of sugar dissolved in enough water to make a syrup. Cook slowly until tender.

Quince Marmalade. — Pare and core quinees and cook until soft in enough water to cover them. Then rub through a sieve and add three quarters the weight of sugar. Cook twenty minutes and put into jelly glasses.

Quince Honey. — Pare and grate five large quinees. Add five pounds of sugar to one pint of boiling water. When sugar is dissolved, add the grated quince and cook twenty minutes. Turn into jelly glasses.

Quince Jelly. — Put parings and imperfect quinees into a preserving kettle, with one quart of water to two of the fruit. Cook slowly for about two hours. Then strain, measure juice and bring to the boiling point. Add an equal quantity of hot sugar and boil until a drop of it placed upon a cold dish hardens. A nice jelly is made by using one-half apple juice in the above receipt.

Preserved Quinees. — Pare and core quinees. Place in a kettle with enough water to cover them and cook until soft. Then add sugar equal in weight to amount of fruit, and cook until it reaches the desired color.

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CROP REPORT Agricultural College

FOR THE

MONTH OF OCTOBER, 1910.

GRAPE CULTURE.

ISSUED MONTHLY, MAY TO OCTOBER, BY STATE BOARD OF
AGRICULTURE, STATE HOUSE, BOSTON, MASS.

J. LEWIS ELLSWORTH, *Secretary.*

ENTERED JUNE 3, 1904, AT BOSTON, MASS., AS SECOND-CLASS MATTER,
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CROP REPORT FOR THE MONTH OF OCTOBER, 1910.

OFFICE OF STATE BOARD OF AGRICULTURE,
BOSTON, MASS., Nov. 1, 1910.

This bulletin is the final issue of the season. We desire at this time to express our hearty appreciation to our staff of upwards of two hundred correspondents, who have so faithfully furnished us with the material which forms the basis of this report. We trust that our readers, as well as ourselves, appreciate that without the loyal work of these correspondents, given entirely without reward of any kind, it would be impossible for us to publish these reports.

The special articles printed this year have been: Bulletin No. 1, "Corn selection for seed and for show," by Prof. Wm. D. Hurd; Bulletin No. 2, "Asparagus growing," by Mr. Frank Wheeler; Bulletin No. 3, "Alfalfa as a crop in Massachusetts," by Prof. Wm. P. Brooks; Bulletin No. 4, "Celery growing, storing and marketing," by Mr. Henry M. Howard; and Bulletin No. 5, "Quince culture," by Prof. F. C. Sears. Bulletin No. 4 contained also a list of the publications of the Board available for distribution, and Bulletin No. 5 a list of the articles of interest in the annual reports of the Board which we have on hand for free distribution. The edition of each of these bulletins was considerably in excess of the number called for by our mailing list, so that we are still able to supply all but Bulletin No. 2 to any who may apply for them. The article on "Asparagus growing," contained in that bulletin, will be included in our next annual report, and a reprint made at that time, which will be mailed, when issued, to any who may ask for it in the mean time.

The article for this month is on a crop which has been somewhat neglected in Massachusetts, but which should form

a part of every well-stocked home garden, and which, with proper care, may well be made profitable by those having the proper location. The subject of the article is "Grape culture," and it is by Mr. Edward R. Farrar, a grape grower of long and profitable experience. Seldom have we presented an article which contained so much solid matter on the subject treated, condensed into so few pages.

For the information of our readers we give the following statement of facts in regard to the publication of our last crop report, Bulletin No. 5. The last copy was placed in the printers' hands on September 30. Copies were received from the printers as follows: October 11, 600; October 13, 4,800; October 14, 1,000. The unusual delay was largely due to pressure of work on the publication of the State pay rolls, which handicapped the printers unduly. It will be remembered that October 12 was a legal holiday.

PROGRESS OF THE SEASON.

The Crop Reporting Board of the Bureau of Statistics of the United States Department of Agriculture (Crop Reporter for October, 1910) estimates the average condition of corn on October 1 to have been 80.3, as compared with 78.2 a month earlier, 73.8 in 1909, 77.8 in 1908, and a ten-year average of 78.4.

The preliminary estimate of the average yield per acre of spring wheat is 11.8 bushels, compared with 15.8 bushels, the final estimate in 1909, and 13.7, the average of the past ten years. The indicated total production of spring wheat is 233,475,000 bushels, against 290,823,000 bushels in 1909. The quality is 94.1, against a ten-year average of 86.2. The indicated production of spring and winter wheat combined is 691,769,000 bushels, against 737,189,000 bushels finally estimated in 1909. The quality is 93.1, against 90.4 in 1909 and 89.4 in 1908.

The average yield per acre of oats is about 31.9 bushels, as compared with 30.3 in 1909, and a ten-year average of 29.5. The indicated total yield is 1,096,396,000 bushels, against 1,007,353,000 finally estimated in 1909. The quality is 93.8, against a ten-year average of 86.1.

The indicated average yield of barley is 22.4 bushels per acre, as compared with 24.3 bushels finally estimated in 1909, and a ten-year average of 25.7. The indicated total yield is 158,138,000 bushels, against 170,284,000 bushels finally estimated in 1909. The quality is 88.1, against a ten-year average of 86.9.

The average condition of buckwheat at time of harvest was 81.7, against 82.3 a month earlier, 79.5 in 1909, 81.6 in 1908, and a ten-year average of 83.3.

The average condition of potatoes October 1 was 71.8, against 70.5 a month earlier, 78.8 in 1909, 68.7 in 1908, and a ten-year average of 75.6.

The average condition of tobacco October 1 was 80.2, against 77.7 a month earlier, 81.3 in 1909, 84.1 in 1908, and a ten-year average of 83.

The average condition of apples October 1 was 46.4, against 46.8 a month earlier, 43.9 in 1909, 48.4 in 1908, and a ten-year average of 53.8.

The average condition of grapes October 1 was 72.7, against 73.5 a month earlier, 86.5 in 1909, 83.9 in 1908, and a six-year average of 84.1.

The average condition of pears October 1 was 64.7, against 63.9 a month earlier, 54.2 in 1909, and 75 in 1908.

The average condition of cranberries October 1 was 74.7, against 76.8 a month earlier, 75.9 in 1909, 58.3 in 1908, and a four-year average of 73.

In Massachusetts the average condition of corn October 1 was 92; the yield per acre of oats was 36 bushels, the production 252,000 bushels, and the quality 95; the condition of buckwheat was 92; of potatoes, 80; of tobacco, 93; of apples, 70; of grapes, 69; of pears, 74; of cranberries, 67; of tomatoes, 87; of cabbages, 82; of onions, 75; of beans (dry), 86; of beans (Lima), 82; and of millet for hay, 90.

MASSACHUSETTS WEATHER, 1910.

[FURNISHED BY WEATHER BUREAU, BOSTON.]

January: The weather of the month was stormy, even for the winter season, precipitation occurring on fifteen days, with monthly amounts near the average. The snowfall for

the month ranged from 4 inches in coast sections to over 20 inches in interior sections. The temperature of the month was somewhat above normal, the average daily excess ranging from 2° to 5° . The lowest minimums were in the western sections, and were 17° below zero. The sunshine for the month was below average.

February: The weather of February was seasonal and without special features. The precipitation was from normal to somewhat excessive, and well distributed throughout the month. The snowfall ranged from 1 inch at Provincetown to 30 inches in parts of Berkshire County. Precipitation occurred on thirteen days. The minimum temperatures ranged from 3° above zero to 15° below zero. The monthly mean temperature was generally in excess of the normal. There were twelve clear days.

March: The month was unusually mild, with temperatures much above the normal, generally between 6° and 7° , and no severe storms. In some localities the maximum temperatures during the last decade were above 75° , and the highest on record for March. The precipitation was generally less than 2 inches. At the close of the month rain was much needed, and the season was from ten days to a fortnight in advance of the normal. There was much more than the average amount of sunshine.

April: The month was much above the normal in temperature, from 4° to 6° , and one of the warmest of its name. The maximum temperatures occurred on the 6th and 7th, and ranged from 72° to 80° . The precipitation was well distributed throughout the month and over the State. There was somewhat more than the average amount of sunshine. The season at the close of the month was about two weeks earlier than usual.

May: The weather of the month was very unsettled, with an unusual prevalence of cloudiness, a marked deficiency in the rainfall, and monthly temperatures near the seasonal average. Although showers fell on twelve days the monthly rainfall in nearly all sections was less than 50 per cent of the May average. There was much fog. The daily temperatures were without special features.

June: The temperature was below the average and there was quite marked excess of rainfall, the total precipitation for the month ranging from 1 to 2 inches above the normal. The temperatures throughout the month were unusually even. There was an unusual prevalence of cloudiness. The winds were light and variable, and in coast sections there was more than the average amount of fog.

July: The month as a whole was unusually warm, with a marked deficiency in the rainfall. Daily mean temperatures were much above the normal, the excesses ranging from 2° to 12° , but there were no extremely high temperatures or record-breaking days. The rainfall was only from 25 to 40 per cent of the normal, and resulted from local disturbances and was unevenly distributed.

August: The month was about normal in temperature and much below the normal in rainfall. The average rainfall for the month over the State was generally about 1 inch, against a normal amount of 4 inches. There were no high temperatures during the month, though humidity on several dates gave oppressive conditions. The amount of sunshine was somewhat above the average.

September: The month was cooler than the average, with the precipitation considerably below the normal. The cool weather was the result of uniformly moderate temperatures. The nights were seasonably cool, and generally speaking without killing frosts. The monthly precipitation was generally from 25 to 30 per cent below the normal for the month. With the exception of the first week there was an abundance of sunshine. The winds were variable, and generally light to moderate.

WEATHER OF OCTOBER, 1910.

The weather of the month was considerably warmer than usual, and, with slight exceptions, generally in extreme eastern sections, there was a marked deficiency in the rainfall. The first week of the month was unseasonably warm, with the daily temperatures ranging from 4° to 20° above the normal. The 5th and the 6th were extremely warm days, with the temperature 85° and above, which in some sections broke all records. A cool spell prevailed from the

8th to the 13th, during which the temperatures were normal to several degrees below. With the exception of high temperatures from the 16th to the 20th, the rest of the month was moderate. Rain in the form of showers fell on an average of thirteen days, but generally with light rainfall. The only noted exception was a downpour of 3.86 inches, at Nantucket, on the 20th. In a number of instances the rains occurred in the evening or at night, so that, as a rule, the weather of the month was marked by an abundance of sunshine. Thunderstorms were quite general on the 15th and the 25th; severe in some localities, with destructive winds and violent electrical phenomena. High winds and gales were general along the coast on the 1st and 2d and the 20th and 21st. With the latter storm were very high tides, and considerable damage resulted to property interests in some sections from the wind force and the high water. Killing frosts occurred in some localities on several dates, although generally speaking the cold was less severe than usual in October. The weather of the month as a whole was very favorable to all outdoor pursuits. Rain is much needed in nearly all sections of the State.

PUBLICATIONS OF THE MONTH.

The only pamphlets issued in October were the Crop Report and reprints of the essays on "The Farmer's Interest in Game Protection," by Edward Howe Forbush, and on "The Culture of the Pear," by George T. Powell, appearing in the Crop Reports for May and September, 1909, and more recently in the annual report for that year. The Crop Report contained an article on "Quince Culture," by Prof. F. C. Sears, and a list of available annual reports, together with the lectures and essays on matters of current interest to be found in each.

Bulletins Nos. 1 and 2, on "Poultry Culture" and "Orcharding," respectively, listed in the August number of this report, are no longer available. These have been revised, however, and copy placed with the printers. A new bulletin, entitled "Small Fruits and Berries," and to be known as Bulletin No. 4, has been prepared. These three

bulletins will probably be ready for distribution some time in November. For those who have copies of the original edition of Bulletin No. 2 and the essay on "Western Methods in New England Orcharding" a separate edition of Professor Sears' lecture on "Varieties of Apples for Massachusetts Orchards" will be issued. The last two will be incorporated in the new edition of this bulletin. The latter was first published in the annual report for 1909. The contents of the foregoing bulletins are given below:—

Bulletin No. 1. Poultry Culture.

Progressive and Profitable Poultry Culture. By Arthur A. Brigham, Ph.D.

The Management of Poultry on Small Farms. By Mr. John H. Robinson.

Breeds for the Farm and Farmers as Poultry Breeders. By Mr. John H. Robinson.

Practical Poultry Housing. By Mr. John H. Robinson.

Some Practical Phases of Poultry Feeding. By Mr. John H. Robinson.

Hatching and Rearing Chicks by Natural Methods on the Farm. By Mr. John H. Robinson.

Artificial Hatching and Rearing of Chickens, as applied to "South Shore Roasters." By Mr. Henry D. Smith.

Poultry Keeping on Small Farms. By Rev. W. H. Davenport.

Economy of Labor in Poultry Keeping on Farms. By Mr. John H. Robinson.

Bulletin No. 2. Orcharding.

The Relation of Fruit Culture to the Value of New England Farms.

By Mr. George T. Powell.

The Soil: Importance of its Character for the Culture of Fruit. By Mr. George T. Powell.

Fruits for Local Markets. By Mr. J. H. Hale.

The Planting of a Commercial Orchard in Massachusetts. By Prof. F. C. Sears.

Renovating Old Orchards. By Prof. F. C. Sears.

Harvesting and Marketing Apples. By Prof. F. A. Waugh.

Massachusetts Fruit Trees and their Insect Foes. By Dr. H. T. Fernald.

Western Methods in New England Orcharding. By Prof. F. C. Sears.

Varieties of Apples for Massachusetts Orchards. By Prof. F. C. Sears.

Bulletin No. 4. Small Fruits and Berries.

Fruits for the Home Garden: Varieties and Culture. By Prof. F. A. Waugh.

Peach Culture. By Prof. F. A. Waugh.

Plum Culture in Massachusetts. By Prof. F. A. Waugh.

The Culture of the Pear. By Mr. George T. Powell.

Quince Culture. By Prof. F. C. Sears.

Bush Fruits. By Prof. Fred S. Card.

Grape Culture. By Mr. Edward R. Farrar.

Strawberry Culture. By Prof. F. A. Waugh.

Cranberry Culture. By Mr. Lucian J. Fosdick.

We now feel certain that the long-awaited report on the "agricultural resources, advantages and opportunities of Massachusetts," containing a list of farms for sale, will be delivered by the printers within the coming month. Applications for this report as well as for the forthcoming bulletins will be filed as received. Copies will be mailed postpaid. Our next Crop Report for May, 1911, will give a list of the publications issued in the intervening period.

CROPS OF THE YEAR.

At the close of May vegetation and farm work were considerably in advance of the normal, while early crops were not beyond normal, owing to cold and unpleasant weather. Grass started early, but did not make as rapid growth as was expected, but promised well. Fall seeding generally wintered well. The fruit bloom was generally heavy, except for peaches, and was not injured by frosts, except the early bloom of strawberries. Insects were about average in their development and numbers. Planting was well in hand at the close of the month. There was a fair supply of farm help to be had, with wages rather higher than for the past few years, day help commanding especially high prices. There was a marked increase in the acreage of corn, especially for grain, also in that of onions in the Connecticut valley. A considerable increase in interest in fruit growing was shown by the setting out of new orchards, greater atten-

tion to spraying and considerable areas of new cranberry bog.

Insects were not unusually numerous or injurious in June. The increase in the acreage of field corn was not as great as indicated in May, owing to failure of germination and delay in planting. The crop was very uneven, and in some cases poor in color. Haying was just beginning, with a good normal crop in prospect. The acreage of potatoes was decreased to a considerable degree, and the crop generally backward, but promising well. Yields of early market-garden crops were not above average and good prices were received. The supply of dairy products was fully up to the normal and prices were higher than ever before. Dairy cows were very scarce and high. Feed in pastures was in excellent condition. The strawberry crop suffered severely from rains and good prices were received. The set of fruit was not what was expected from the bloom. More farmers have sprayed than in any previous year.

Little damage was reported from insects in July. Corn came forward very rapidly, and at the close of the month was near the normal. The hay crop was one of the best for years and secured in good condition. Rowen did not start well, owing to lack of rain. The usual acreage of forage crops was put in, corn and millet being the favorites. Market-garden crops were uneven, some having suffered from drought, with prices lower than of late years. Apples dropped badly, and promised poorly; pears and plums light; peaches rather better than usual; quinces promised well; grapes average; cranberries not above average. Pastures were beginning to suffer from drought. Rye and oats were good crops in most sections. Barley looked well as a late forage crop. New orchards were not extensively planted in 1909 and 1910, but reports indicated that old orchards received much better care in pruning, spraying and fertilizing than ever before.

Corn was greatly benefited by the light rains of August and made good progress. There was little rowen in prospect on any but newly seeded fields. Early potatoes were much

below the normal, but late potatoes looked well, with a few cases of rot reported. The acreage of tobacco in the Connecticut valley is about the same as formerly. The crop responded finely to the rains and promised to be very nearly normal. The returns indicated a light crop of apples, especially winter varieties; pears fair; peaches rather above the average; grapes average; quinces fairly good; cranberries somewhat below average. Pasturage improved with the rains of the month. Oats were an average crop for grain, but not quite as good as usual for hay and green feed. Celery suffered severely from drought; other late market-garden crops backward, but growing well.

September showed Indian corn matured well in almost all sections, and generally close to a normal crop, both for grain and stover. There was little rowen in most sections, except in southeastern Massachusetts, where it was in excess for the region. Feed in pastures was green, but light at the close of the month. Very much less than the usual amount of fall seeding was done, because of drought. Onions are generally a light crop in all sections. Late potatoes would have been an average crop, except for rot, which was most prevalent in the western counties. Root crops were generally in good condition; celery light; late market-garden crops in general much in need of rain. Apples were a light crop and small in size; pears good crop of good quality; peaches light in most sections; grapes not above the average; cranberries a light to medium crop, with the berries small. More spraying was practiced on apples than for many years. Several light frosts occurred, but with no appreciable damage to crops.

In the circular to correspondents, returnable October 25, the following questions were asked:—

1. What is the value of the corn crop compared with a normal crop?
2. Have root crops proved to be average crops?
3. What is the condition of farm stock?
4. What is the condition of fall seeding?
5. How have prices for crops raised for market compared with former years?

6. Which of the leading crops in your locality, usually profitable, have been most profitable?

7. Which of the leading crops in your locality, usually profitable, do you think have been least profitable?

8. Considered as a whole, has the season been a profitable one for your farmers?

9. What is the effect of the drought on vegetation, streams, springs and wells?

Returns were received from 125 correspondents, and from them the following summary has been made up:—

VALUE OF THE CORN CROP.

The corn crop appears to be considerably above the normal in value, a good crop of well-matured corn having been secured in almost all sections, and the acreage harvested being much in excess of the usual average. The corn raised for ensilage seems to have gone into the silo in good condition, as regards maturity. Practically all the crop, both for grain and ensilage, was secured without damage from frosts, the absence of killing frosts in September having proved just what was needed. The valuable crop secured should be a considerable factor in reducing the grain bills of Massachusetts farmers for the next twelve months.

ROOT CROPS.

Root crops were generally rather below the average, except on Cape Cod, where they appear to have been fully normal. Potatoes, included in this class by some correspondents, were a disappointment. They suffered from drought more than almost any crop, and rot was prevalent almost throughout the State, still further cutting the yield short. To add to the disappointment in the crop prices have been lower than usual.

FARM STOCK.

The light showers kept feed green and growing all through the season, but feed was nevertheless very short in pastures from midsummer on, and milk stock and many young cattle were fed at the barns, both hay and grain. The milking

stock is generally in good condition therefore, but young stock, where left on pasture without supplemental feed, is frequently reported as coming in thin in flesh. The large hay crop enabled farmers to feed at the barns without feeding it as much as in some other years, and it seems likely that a full stock will be carried through the winter on most dairy farms.

FALL SEEDING.

Much less than the usual amount of fall seeding was done, as the prevailing drought kept land in such condition as to be unsatisfactory for seeding. There are some reports that that put in failed to germinate well, but in general it seems to be looking well, owing to the frequent light rains, though perhaps rather backward. Seeding put in in corn in August has come on nicely, the shade of the corn plants having protected the young grass from the worst effects of the drought. This method of seeding seems to be the one which gives the most uniformly good results, and it is rather remarkable that it is not practiced in more sections.

PRICES.

Prices average higher than usual, despite the generally good crops. Potatoes and cranberries are the only crops of commercial importance for which lower prices are generally reported, and better results are looked for with the later cranberries. Forty correspondents consider prices to have been higher than usual, 67 average and 11 lower than usual. Milk, butter, eggs and meat have brought high prices throughout the year. Apples have generally brought better prices than usual, owing to short crop and better quality, due to increased care and spraying. Prices on tobacco, so far as reported, are fully up to recent years.

MOST PROFITABLE CROPS.

Sixty correspondents, slightly under a majority, consider hay to have been among the most profitable crops; 41, corn; 24, apples; 11, potatoes; 7, tobacco; 5, cabbages; 4, sweet corn; 4, oats; 3, tomatoes; 2, milk; 2, onions; 2, rye;

2, beets; 1, market-garden crops; 1, cranberries; 1, turnips; 1, cauliflowers; 1, parsnips; 1, celery; 1, millet; 1, fruits; 1, forage crops; 1, asparagus; 1, peaches; and 1, lettuce.

LEAST PROFITABLE CROPS.

Seventy-one correspondents, more than a majority, and an unusually large leading number, considered potatoes to have been among the least profitable crops; 9, apples; 6, onions; 6, cabbages; 6, cranberries (an unusually large number for this crop); 4, strawberries; 2, fruit; 2, rowen; 2, squashes; 1, cucumbers; 1, celery; 1, corn; 1, sweet corn; 1, beets; 1, currants; 1, cauliflowers; 1, buckwheat; 1, pears; and 1, root crops.

PROFITS OF THE SEASON.

The season is generally considered to have been a profitable one by the correspondents, 80 stating that it has been profitable; 16, that it has been fairly profitable; 12, that it has been an average year for profit; while 3 hold that it has not been very profitable; and 14, that it has been unprofitable for the farmers in their sections. The crops were generally good, despite the drought; and prices having ruled high, with the good hay crop and well-filled barns, made it difficult to figure the year as anything but profitable, unless the view is adopted that no year is profitable for those engaged in farming.

EFFECTS OF DROUGHT.

Crops were shortened in some instances by drought, but there was surprisingly little damage from this source when we consider the shortage there is in the rainfall for the year when compared with the normal. What the effect will be on grass roots in mowings and pastures remains to be seen, but the heavy hay crop this year, owing to the good rains in June, would seem to indicate that there is every chance of their recovering with good rains next spring. The most serious effect of the drought is on the water supply, and in many sections farmers face the prospect of drawing water from a distance throughout the winter, unless heavy rains

come before the ground freezes. Such a condition is serious as well as annoying. Streams, springs and wells are reported as lower than for many years, and many of them are dry. One well which has not failed since it was dug, one hundred and fifty years ago, is reported to have dried up, and there are many instances of wells and springs which have never failed before, but which are now entirely dry. A tremendous excess of moisture is needed between now and the freezing of the ground to relieve this condition.

NOTES OF CORRESPONDENTS.

(Returned to us October 25.)

BERKSHIRE COUNTY.

Sheffield (E. L. BOARDMAN). — The corn crop is above the normal in value. Root crops are average yields. Farm stock and fall seeding are both in good condition. Prices for crops raised for market have been up to the average. Apples have been our most profitable crop and potatoes our least profitable one. Considered as a whole, the season has been a profitable one to our farmers. Streams are very low and many springs and wells are dry, but vegetation has not suffered much from drought.

Alford (LESTER T. OSBORNE). — Indian corn is an uneven crop, some fields above normal and some below. Root crops are fully up to the average. Farm stock is in average condition, having recovered what it lost in condition in early summer. Fall seeding is above the average in condition. Prices for crops raised for market are a little above the average. Hay and corn have been our most profitable crops. The season has been the best for our farmers for some years. Fields are looking green, owing to light rains, but streams, springs and wells are very low.

Tyringham (EDWARD H. SLATER). — The corn crop is fully up to the normal in value. Root crops are up to the average. Farm stock is in good condition. Fall seeding is looking well. Prices for crops raised for market have been about as formerly. Hay has been our most profitable crop and apples our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Streams, springs and wells are very low, but vegetation has not suffered much.

Richmond (TIMOTHY B. SALMON). — Indian corn is above the normal in value. Root crops are average crops. Farm stock is in good condition. Fall seeding is in good condition. Prices for crops raised for market have been above the average. Hay has been our most profitable crop and potatoes our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Streams and springs are low, and a great many wells dry, but vegetation has not suffered much from drought.

Lenox (HORATIO H. SEARS). — Corn is a normal crop, or slightly better. Root crops are up to the usual average. Farm stock is in

good condition. But little fall seeding has been done here. On the average prices are slightly higher than in former years, although potatoes are lower. Hay has been our most profitable crop, a large crop of good quality, and celery our least profitable one, owing to drought and rot. Considered as a whole, the season has been a profitable one. Springs and small streams are lower than they have been for years, but meadows and pastures have not suffered much from drought. There is a good demand for dairy products and dairy cows bring high prices.

Washington (E. H. EAMES).—The corn crop is about an average one for value. Root crops are yielding well. Farm stock is in very good condition. No fall seeding has been done here. Prices for crops raised for market are about the same as in former years. Potatoes have been our most profitable crop and apples our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Streams, springs and wells are very low and some wells are dry.

Dalton (WESLEY B. BARTON).—The corn crop is 90 per cent of the normal in value. Root crops give average yields. Farm stock is in good condition. Fall seeding is in good condition. Prices for crops raised for market have been better than for several years. Market-garden crops have been our most profitable crops and potatoes our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Streams, springs and wells are very low.

Savoy (WILLIS W. BURNETT).—The corn crop is fully an average with former years. Root crops are about average. Farm stock is in fairly good condition, considering the dry season. Very little fall seeding was done, but it is looking finely. Prices for farm crops are fully average with former years. Hay has been our most profitable crop. On the whole, the season has been fairly profitable for our farmers. Vegetation has suffered somewhat from drought and the water supply has been and still is somewhat low.

Williamstown (S. A. HICKOX).—Indian corn is 85 per cent of a normal crop in value. Root crops are up to the usual average. Farm stock is in good condition. Fall seeding is in fair condition. Prices for crops raised for market have been better than usual. Hay has been our most profitable crop and potatoes our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Drought injured early potatoes and fall seeding.

FRANKLIN COUNTY.

Rowe (HENRY D. WRIGHT).—The corn crop is above normal in value. Root crops have proved to be average crops. Farm stock is in average condition. Fall seeding is in good condition. Prices for

crops grown for market have not been as good as last year. Apples have been our most profitable crop and potatoes our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Springs and wells are low and pastures dry. Cattle are coming into the barn earlier than usual on account of the drought.

Colrain (W. H. DAVENPORT). — Indian corn is a little above the normal and well matured. Root crops are average, but not more, owing to dry weather. Farm stock is looking well. Fall seeding suffered somewhat from drought. Prices for farm crops are about as last year. Apples are emphatically our most profitable crop, and possibly potatoes are our least profitable one, as they are rotting, though not badly. Considered as a whole, the season has been a profitable one for our farmers. Streams are very low and springs and wells exceptionally low, but vegetation stood the drought remarkably well.

Buckland (EUGENE D. GRISWOLD). — Indian corn is very nearly an average crop, possibly a bit below the normal. Root crops have turned out very well, with the exception of potatoes, which are rotting badly. Farm stock is in excellent condition. Seeding is principally done in corn and is looking well. Prices for farm crops are averaging higher than for several years. Apples are our most profitable crop and potatoes our least profitable one, owing to rot. As a whole, the season has been a good one for the farmer. Springs and brooks are very low, some being entirely dry.

Shelburne (W. J. PURRINGTON). — Corn is rather more than a normal crop. Farm stock is in good condition. Fall seeding is in fairly good condition. Prices are better than for several years. Apples have been our most profitable crop and potatoes our least profitable one. The season has been a profitable one for our farmers. Many people are out of water and some are drawing it quite a distance.

Whately (C. L. CRAFTS). — The corn crop is about 90 per cent of the normal in value. Root crops are up to the average. Farm stock is in fair condition. Fall seeding is rather poor, owing to drought. Prices for crops raised for market are about as usual. Onions and tobacco are our most profitable crops, prices being good for the little tobacco sold, and rowen and potatoes our least profitable ones, dry weather checking rowen and rot affecting potatoes. On the whole, this has been an excellent year. Streams, springs and wells are very low. One water system, usually supplying forty farms, is almost entirely dry, but four receiving any water. This system is supplied by springs which have not failed before since the reservoir was built, some eleven years ago.

Sunderland (GEO. P. SMITH). — Indian corn is just about a normal crop. Root crops are average crops. Farm stock is in good condition. Fall seeding is in fair condition, having suffered from drought. Prices for crops raised for market are rather higher than usual. Tobacco and

onions have been our most profitable crops. Considered as a whole, the season has been a profitable one for our farmers. Vegetation is in fair condition, but streams are low, though not many are out of water.

Montague (A. M. LYMAN). — The corn crop is above the average in value. Root crops are turning out fairly well. Farm stock is better than usual, there having been much feeding from the barn. Fall seeding is in extra good condition. Prices for farm crops are more than average. Hay has been our most profitable crop and onions our least profitable one, the crop being uneven. The season has been fairly profitable for our farmers. Springs and wells are very low and many have to draw all their water. Some tobacco was taken down and stripped last week and showed good quality.

Wendell (N. D. PLUMB). — Corn shows the largest acreage and yield in years. Root crops are not up to the average. Farm stock is above the average in condition. Fall seeding is looking well, but needs rain. Corn, hay, apples and potatoes have been our most profitable crops, but early potatoes were nearly a failure. Considered as a whole, the season has been a profitable one for our farmers. Springs, streams and wells are the lowest ever known and one-fourth of the people have to draw water.

New Salem (DANIEL BALLARD). — Indian corn is nearly a normal crop. Root crops are up to the usual average. Farm stock is looking well. Fall seeding is in fine condition. Prices for farm crops compare favorably with other years. Hay has been our most profitable crop. Considered as a whole, the season has been unusually profitable for our farmers. The effect of the drought is not very serious on vegetation, but streams are very low, as are springs and wells, and some have given out altogether.

HAMPSHIRE COUNTY.

Enfield (D. O. CHICKERING). — Indian corn is a much more valuable crop than usual. Root crops are up to the average. Farm stock is in fine condition. Prices for farm crops have been fully up to the average. Hay and corn have been our most profitable crops and potatoes our least profitable one. Considered as a whole, the season has been a profitable one. Drought has shortened pasturage and wells and springs are the lowest they have been in years.

Belchertown (A. L. PRATT). — The corn crop is 10 per cent above the normal in value. Root crops are average yields. Farm stock is in fair condition. Fall seeding is in poor condition. Prices for crops raised for market rule high. Hay has been our most profitable crop and potatoes our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Springs and wells are lower than I ever saw them.

Pelham (JOHN W. KNIGHT). — The corn crop is the best I have ever seen. Root crops are up to the average. Farm stock is looking well.

Fall seeding is not looking as well as usual. Prices for crops are about the same as in other years. Corn is our most profitable crop and potatoes our least profitable one, owing to low prices. The season has been a good one for our farmers. Vegetation is green, owing to showers, but streams, springs and wells are very low.

Amherst (Wm. P. BROOKS). — The corn crop is considerably above the normal in yield, but prices must rule lower than for the last two years. Root crops are average, but unimportant in this section. Farm stock is in good condition. Fall seeding is mostly done in corn and looks well; late seeding by itself is in fair condition, but had too little rain. Prices for farm crops are lower than usual as a rule, except for onions and squashes, which have been higher. Hay and tobacco have been our most profitable crops, and onions where yield was good and potatoes and cauliflower our least profitable ones, with onions the same for many, owing to small yields. The season has been about average for profit; dairy and poultry products have been high, also pork. Occasional light showers have kept vegetation in fair condition, but sources of water supply are all very low.

Hadley (H. C. RUSSELL). — The corn crop is 10 per cent better than usual. Root crops are average crops. Farm stock is in good condition. Fall seeding is in poor condition. Prices for crops raised for market are about the same as usual. Tobacco has been our most profitable crop and potatoes our least profitable one. Springs and wells are very low, never more so, and without heavy rains we shall lack water this winter.

Southampton (C. B. LYMAN). — The corn crop was better than average and much better than was expected. Farm stock is in fairly good condition. Fall seeding is in very good condition and more will be done later. Prices for farm crops are about average. Tobacco and hay have been our most profitable crops and potatoes and apples our least profitable ones. The drought has cut short the feed in pastures and many small streams and wells are dry.

Westhampton (LEVI BURT). — The corn crop is fully normal in value. Root crops are about two-thirds of the normal. Farm stock is in good condition. Fall seeding is in excellent shape. Prices for crops raised for market are about the same as last year. Taken as a whole apples are our most profitable crop and potatoes our least profitable one. The season has been a profitable one, with a full crop of hay and a fine crop of corn. Streams and springs are very low, but vegetation has not suffered as much as you would expect from drought.

Chesterfield (HORATIO BISBEE). — Indian corn is fully up to an average crop. Farm stock is in fairly good condition. Fall seeding is not in the best condition. The abundant hay crop is our most profitable crop and potatoes our least profitable one, on account of much rot and low prices. Considered as a whole, the season has been a profitable one for our farmers. Vegetation is brown from drought, streams are

low and wells and springs dry in many cases. The apple crop is proving much better than expected, with quality fine and prices good.

Plainfield (C. A. WILLIAMS). — The corn crop is above the normal in value. Root crops are above the average. Farm stock will come to the barns in good condition. Fall seeding is looking fairly well. As a rule prices are high for market crops. Corn is our most profitable crop and potatoes our least profitable one, owing to rot. Considered as a whole, the season has been a profitable one for our farmers. The dry weather has shortened some crops considerably; streams, springs and wells are very low.

HAMPDEN COUNTY.

Granville (JOSEPH WELCH). — Indian corn is the best crop we have had for some years. Root crops are up to the usual average. Farm stock is looking very well. Prices for farm crops are rather better than usual, except for potatoes, which are low. Apples are our most profitable crop and potatoes our least profitable one. I should think that the season had been a profitable one for our farmers. Water in streams, springs and wells is very low, and many wells are dry.

Russell (E. D. PARKS). — The corn crop is rather above the normal in value, on account of increase in amount raised. Root crops are average yields. Farm stock is looking fairly well, considering the dry season. But little fall seeding has been done, but that put in looks well. Prices for crops raised for market are up to the average. Hay has been our most profitable crop and potatoes our least profitable one. Pastures are very dry; streams low or dried up and many springs and wells dry.

Southwick (L. A. FOWLER). — Indian corn turned out better than expected, considering the dry summer. Farm stock is in good condition. Fall seeding is looking well, but needs rain. Potatoes bring lower prices than last year. During the foggy weather about October 20th tobacco became damp and much was taken from the poles. The season will average well with the past few years for profit. Streams, springs and wells can not well be much lower and continue to exist at all.

West Springfield (N. T. SMITH). — Indian corn is 90 per cent of a normal crop. Root crops are up to the average. Farm stock is fully average in condition. Fall seeding is in good condition. Prices for crops raised for market are about average with the past ten years. Corn, and what little tobacco is grown here, have been our most profitable crops and potatoes our least profitable one, with some fields of onions second. Considered as a whole, the season has been a profitable one for our farmers. Vegetation is still green; streams and springs low, but little discomfort as yet. Cabbages are rather short on account of drought. Onions are small. Potatoes good size, but few in number. Apples very short, with a few exceptions.

East Longmeadow (JOHN L. DAVIS). — The corn crop is about average in value. Root crops are not up to the usual average. Milk cows are in good condition, but dry stock is not so good. Very little fall seeding has been done, on account of dry weather and it looks backward. Prices for farm crops have been average. Corn and hay have been our most profitable crops and potatoes and cabbages our least profitable one. Considered as a whole, the season has been about an average one for profit. Drought injured fall feed and root crops, and springs and wells are very low. I consider the rise in value in farm stock and farms for the past few years equal to what an average farmer would accumulate in ten years, in other words if he has not lost money he has been making it.

Hampden (JOHN N. ISHAM). — The corn crop is 10 per cent above the normal in value. Roots have proved good average crops. Farm stock is in fair condition. Fall seeding is starting slowly, but is in good condition. Prices for most crops have been better than in former years. Hay, corn, rye and apples have been our most profitable crops and potatoes and buckwheat our least profitable ones. Farmers as a rule have prospered this year, as more crops were good than usual and prices a little higher. Pastures and potatoes suffered from drought but streams, springs and wells are very low.

Ludlow (CHAS. B. BENNETT). — The corn crop is above the average in value. Root crops are a little below the average. Farm stock is in very good condition. Fall seeding is in fair condition. Prices for farm crops have been better than usual. Hay and corn have been our most profitable crops and potatoes our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. The rowen and cabbage crops are nearly failures, owing to drought, wells and springs are dry, and the milk question is getting serious.

Monson (F. D. ROGERS). — The corn crop is fully up to the average in value and is ripened up well. Root crops have proved to be average yields. Farm stock is in fair condition. Not much fall seeding has been done, but some will be put in just before the ground freezes. Prices for crops raised for market are fully up to the average. Considered as a whole, the season has been a profitable one for our farmers. Light showers have kept vegetation in good condition, but streams and wells are very low.

Brimfield (F. N. LAWRENCE). — We have better than an average crop of corn. Root crops are not as good as usual on account of drought. Farm stock is in fair condition. Fall seeding is looking well. Potatoes are the main crop raised here and have sold from 60 to 80 cents per bushel. Corn has been our most profitable crop, while potatoes have rotted badly in some places. Considered as a whole, the season has been fairly profitable. Many springs and wells are dry and farmers are drawing water. Grasslands do not show the effect of the drought as much as pastures, but I think it will effect next year's hay crop.

WORCESTER COUNTY.

Southbridge (E. T. TORREY). — The yield of corn is about 10 per cent better than the normal. Root crops are up to the usual average. Farm stock is coming to the barn in good condition. Owing to the drought fall seeding is not generally satisfactory. Prices for farm crops are about average. Hay has been our most profitable crop and potatoes our least profitable one. Considered as a whole, the season has been a profitable one for our farmers, hay and corn having both been good crops. The drought in this section is the worst for a long time and many streams, springs and wells are dry.

Charlton (LOREN E. STEVENS). — The corn crop is the same as usual in value. Root crops have proved to be average crops. Farm stock is in much the same condition as usual. Fall seeding dried up where the seed germinated. Prices for farm crops have been about as usual. The season has been a fairly profitable one for our farmers. Corn has done well and we have a good yield of potatoes, though there is some complaint of rot. Harvesting is nearly all completed. Water is very scarce; wells and brooks are dry and springs low.

Warren (W. E. PATRICK). — The corn crop is about a third above the normal in value. Root crops are somewhat below the average, probably 75 per cent of the normal. Farm stock is in very good condition. The weather has been so dry that very little fall seeding has been done. There is not much change from the prices for farm crops received for the past few years. Hay and corn have been our most profitable crops and potatoes our least profitable one. Considered as a whole, the season has been a very profitable one for our farmers. The drought has not affected vegetation seriously, but streams, springs and wells are giving out and the situation is serious.

North Brookfield (JOHN H. LANE). — The corn crop is fully up to the normal, but not well matured. Potatoes are 80 per cent of an average crop. Farm stock is in good condition. Fall seeding is in fair condition. Prices for crops raised for market are about average. Hay, corn and apples are our most profitable crops and potatoes our least profitable one. The season has been fairly profitable. Vegetation has been cut from 20 to 30 per cent; streams are very low; springs are nearly or quite dry.

Barre (JOHN L. SMITH). — Corn is less valuable than usual for stover, but extra well cared. Root crops are up to the average. Farm stock is in good condition. Fall seeding is in good condition. Prices for crops raised for market are a little better than usual. Apples have been our most profitable crop and potatoes our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. The drought has affected the rowen crop, but other crops as a rule have come through it well; streams, wells and springs are very low, and much rain is needed before winter.

Dana (LYMAN RANDALL). — The corn crop is fully normal. Root crops are not average crops, especially on dry land. Farm stock is in fair condition, but pasturage is short. Fall seeding is looking well. Prices for most crops have not ruled as high as in some other years. Corn and hay have been our most profitable crops and potatoes and root crops our least profitable ones. Considered as a whole, the season has been a profitable one. The drought has been hard on vegetation; streams are very low, and springs and wells are dry, or nearly so.

Petersham (B. W. SPOONER). — Indian corn is a fair crop, but not quite normal. All root crops, but flat turnips, are normal crops. Farm stock is in good shape for winter. Very little fall seeding has been done in this vicinity. Prices for crops raised for market have averaged about the same as usual. The hay crop has been our most profitable and potatoes our least profitable one, on account of dry weather. I hear no complaint that the season has not been profitable. Pasturage holds out well in spite of the drought, but streams, springs and wells are very low.

Templeton (LUCIEN GOVE). — The corn crop is 90 per cent of the normal. Root crops are 95 per cent of a full normal crop. Farm stock is in good condition, considering the drought. Fall seeding is in fair condition, though drought has shortened its growth. For most farm crops prices have improved. Corn as ensilage, hay, cabbages, oats and millet have been our most profitable crops and potatoes, apples and squashes our least profitable ones. Considered as a whole, the season has not been an average one. Pastures and fields are in poor condition, and wells, streams and springs are extremely low. A well dug 150 years ago has failed for the first time.

Gardner (W. E. KNIGHT). — In this section Indian corn is an average crop. Root crops are giving average yields. Farm stock is in fair condition, but milk cows are not doing as well as usual. Little fall seeding was done, owing to drought. We have had a ready market for farm crops and good prices. Hay has been our most profitable crop and cabbage our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Water is very low, many wells are dry, and unless we have plenty of rain it will be hard for many to care for their stock this winter.

Fitchburg (DR. JABEZ FISHER). — Prices for crops raised for market are decidedly better than usual. Fruits have been our most profitable crops and potatoes our least profitable one. The season has been about an average one for profit. Moderate droughts are favorable to most vegetation, as such conditions favor the formation of fruit buds for the following year. If more severe the buds are still formed, but not matured, in which case a very full bloom may occur, but as in this season the set is more or less a failure, and the fruit either does not show or drops off prematurely. Excessive rains force the growth of wood and foliage, but this is not likely to be followed by fruitfulness.

Severe drought is opposed to growth and not the best for fruit. A happy medium is moderate drought.

Shrewsbury (FRED J. REED). — Indian corn is up to a normal crop in value. Root crops are average crops. Stock is looking well. Very little fall seeding was done on account of dry weather. Prices for crops raised for market are about the same as usual. Cabbages and tomatoes are our most profitable crops and potatoes our least profitable one. Considered as a whole, the season has been a very fair one for profit. Many farmers are drawing water for their stock who never had to do so before.

Leicester (H. H. KINGSBURY). — The corn crop is fully normal in quantity and quality. All root crops except potatoes have proved to be average crops. Dairy stock which has had feed at the stable is in good condition. What little fall seeding was done looks well. Prices of most farm crops are unchanged. Hay has been our most profitable crop and potatoes our least profitable one. The season has not been a profitable one if the production of milk is considered. Streams, springs and wells are dry in many instances, and it causes much inconvenience to supply stock with good drinking water.

Sutton (J. E. GIFFORD). — The corn crop is 90 per cent of the normal in value. Root crops are up to the usual average. Farm stock is in good condition. Drought has held back fall seeding from germinating. Potatoes are low in price, but other crops are about the same as usual. Apples have been our most profitable crop and potatoes our least profitable one. Considered as a whole, the season is fairly profitable. Vegetation has withstood drought fairly well, but springs and wells have, in many cases, been dry for several weeks.

Milford (J. J. O'SULLIVAN). — The corn crop is not up to the average in value. Root crops are below the average. Farm stock is about as usual in condition. Fall seeding is short. Prices for crops raised for market are fully up to the average of former years. Hay has been our most profitable crop and cranberries our least profitable one. The season has not been profitable, because of the high prices our farmers have to pay for what they buy. The drought has injured vegetation, dried up wells and reduced streams.

MIDDLESEX COUNTY.

Hopkinton (W. V. THOMPSON). — The corn crop is about normal in value. Root crops are not average. Pastured stock is thin because of dry weather, but barn-fed stock is generally in good condition. Fall seeding looks well in some cases, but is rather dry. Potatoes are low in price, but apples bring fair prices. Corn has been our most profitable crop and potatoes our least profitable one. The season cannot really be called a profitable one for our farmers. Nearly all wells are dry. August seeding of alfalfa looks well.

Framingham (MERVIN R. PARSONS). — The corn crop is better than average, but I do not know that it is more valuable. Root crops are not up to the average. Stock is in good condition, although pastures have been very short. Fall seeding is in poor condition. Prices have been good, better than average for crops raised for market. Apples have sold extra well and have been our most profitable crop, and potatoes have rotted badly and have been our least profitable one. Considered as a whole, the season has been a profitable one. Streams, springs and wells are the lowest ever known.

Stow (GEO. W. BRADLEY). — The corn crop will compare favorably with the average in value. Root crops are up to the average. Farm stock is in very good condition. Fall seeding looks very well, considering the dry weather. Apples have been our most profitable crop and potatoes our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Vegetation does not seem to be as badly affected by the drought as do the streams and wells.

Townsend (GEO. A. WILDER). — Corn is an average crop. Root crops are giving average yields. Farm stock is in good condition. Fall seeding is in good condition. Prices for crops raised for market have been higher than usual. Apples and potatoes have been our most profitable crops. Considered as a whole, the season has been a profitable one for our farmers. In certain parts of the town wells are low, but the condition is not serious.

Dunstable (A. J. GILSON). — The corn crop compares well with the normal. Root crops have proved to be a little above the average. Farm stock is generally in good condition. Fall seeding is in as good condition as can be expected for the dryness of the season. Generally farm crops have sold a little lower than in former years. The hay crop has been considered the most profitable crop of the season, and fruit crops have not been very profitable. The season has been about an average one for our farmers. The drought has greatly retarded the growth of vegetation, and streams, springs and wells are extremely low.

Chelmsford (W. B. BULLOCK). — The corn crop is about an average one. Root crops have done extra well. Farm stock is looking well. Fall seeding is in fine condition. Fruit has sold for good prices, but hoed crops have been a good deal lower than usual. Apples have been our most profitable crop and potatoes our least profitable one. As a whole, the season has been a profitable one. Streams, springs and wells are a good deal lower than for a good many years.

Concord (WM. H. HUNT). — Not much corn is grown for grain, mostly sweet corn and ensilage corn. Root crops are a little below the average. Farm stock is in good condition. Seeding has been slow to start, on account of continued dry weather. On the whole, prices for farm crops are about up to the average. Strawberries were our most profitable crop, being uneven in yield but bringing good prices. Asparagus was a very light crop, owing to rust on old fields and frost in the grow-

ing season. Considered as a whole, the season has been fairly profitable for our farmers. Crops have suffered from drought on light land, and ponds and streams are low.

Lincoln (C. S. WHEELER). — The corn crop is 75 per cent of the normal in value. Root crops are not up to the average. Farm stock is in good condition. Very little fall seeding has been done, owing to dry weather. Prices are above the average for farm crops. Corn, apples and peaches have brought very good prices and have been our most profitable crops. The season has not been particularly profitable. Vegetation has suffered and streams have mostly gone dry, while springs are low and many wells dry.

Stoneham (J. E. WILEY). — Root crops are up to the average. Fall seeding is in fair condition. Prices for crops raised for market have been higher than usual. Lettuce has been our most profitable crop and cucumbers our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Vegetation is dry on high land and springs and wells are low.

Newton (GEO. L. MARCY). — The crop of Indian corn is fair. Root crops are not up to the normal. Fall seeding is not in the best condition. Prices have been high for crops raised for market. Considered as a whole, the season has not been a profitable one for our farmers. The Charles River is very low for this time of year.

ESSEX COUNTY.

Salisbury (WESLEY PETTENGILL). — The corn crop is about average in value, but perhaps not quite up to last year. Root crops have given average yields. Farm stock is in good condition. But little fall seeding was done, owing to dry weather. The prices for most farm crops have been better than for some years. Hay and corn have been our most profitable crops and potatoes our least profitable one. The season has been fairly profitable, because everything has brought good prices. Streams and springs are very low or dry, and many wells are dry. The apple crop is fair, a great deal better than was expected.

Groveland (A. S. LONGFELLOW). — Indian corn is a good average crop. Root crops are below the average because of dry weather. Farm stock is in very good condition. Fall seeding is looking well. Prices for most market crops are very good. Corn, hay and tomatoes have been our most profitable crops and potatoes our least profitable one. The season has been a profitable one, principally because milk brings a better price than in former years. Drought has ripened the corn nicely, but wells and springs are very low.

Methuen (FREDERICK A. RUSSELL). — The corn crop is an average one. Root crops are up to the average. Farm stock is in good condition. Early seeding looks well, but it has been rather dry for late seeding. Prices for farm crops have averaged about the same as usual. Apples, cabbages, celery, carrots, beets and parsnips have been our

most profitable crop, and potatoes, on account of rot, and onions, on account of blight, our least profitable ones. Considered as a whole, the season has been reasonably profitable. Vegetation has withstood the drought remarkably well, but streams, springs and wells are low.

Rowley (D. H. O'BRIEN). — The corn crop is fully normal in value. Root crops have given average yields. Farm stock is rather thin on account of continued dry weather. Fall seeding is in poor condition. Prices for crops raised for market are about average. Corn has been our most profitable crop and potatoes our least profitable one. Considered as a whole, the season has not been a profitable one. The drought has shortened many crops, springs are low, a few streams and many wells dry, and people have to draw water, both for themselves and their stock.

Topsfield (B. P. PIKE). — The corn crop is 80 per cent of the normal in value. Root crops are light, on account of dry weather. Farm stock is in average condition. Not as much fall seeding was done as usual and it is not in as good condition. Milk has been our most profitable product and apples our least profitable crop. Considered as a whole, the season has been a profitable one for our farmers. Wells are very low and vegetables small on account of drought.

Danvers (CHARLES H. PRESTON). — The corn crop varies greatly, being average on some fields and light on others. Root crops are up to the average. Farm stock is in good condition. Fall seeding is backward, owing to dry weather. Prices for crops grown for market are average. Considered as a whole, the season has been a profitable one for our farmers. Grass has been affected by drought, and streams, springs and wells are lower than for years.

NORFOLK COUNTY.

Cohasset (ELLERY C. BATES). — The value of the corn crop is about normal. Farm stock is in good condition. Fall seeding is looking well. Prices for crops grown for market have been normal. Cauliflower, beans and tomatoes have been our most profitable crops and potatoes our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Springs and wells are very low.

Canton (EDWIN V. KINSLEY). — The corn crop is fully normal in value. Root crops are giving average yields. Farm stock is in very good condition. All seeds have germinated quickly and fall seeding is in A1 condition. Prices for farm crops have ruled above the average. Corn has been our most profitable crop and potatoes our least profitable one. Considered as a whole, the season has been a fair average for profit. There have been light rains enough to keep crops growing, but streams, springs and wells have not been so low for fifty years. Milk is in demand and prices for milch cows are higher than ever before.

Walpole (EDWARD L. SHEPARD). — The corn crop is about 85 per

cent of the normal in value. Root crops are not up to the average. Farm stock is in fairly good condition. Fall seeding is not as good as usual, on account of drought. Prices for crops raised for market are somewhat higher than usual. Hay and potatoes have been our most profitable crops. The season has been a little above the average for profit. Vegetables have been rather small, owing to drought, and springs, streams and wells were never so low.

Millis (E. F. RICHARDSON). — Indian corn is about 85 per cent of a normal crop in value. Root crops are below the average, owing to drought. Farm stock is in fair condition, but that kept in pasture exclusively is thin. Fall seeding is backward, owing to dry weather. Prices for farm crops are up to the average. Hay and corn are our most profitable crops and potatoes our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. The drought is severe.

Franklin (C. M. ALLEN). — The corn crop is 85 per cent of the normal in value. Root crops are 10 per cent below the average. Farm stock was in fair condition. Fall seeding is nearly all dried up. Prices have been higher than usual for farm crops, and crops have cost more to produce. Hay has been our most profitable crop and apples our least profitable one. There has been no profit on most crops this year. The drought is more severe than for fifty years and hundreds of acres are all dried up.

Foxboro (W.M. E. PERKINS). — The corn crop is three-fourths of a normal crop in value. Root crops are average crops. Farm stock is in good condition. Fall seeding is backward. Prices have been normal for crops grown for market. Hay has been our most profitable crop and potatoes our least profitable one. Considered as a whole, the season has not been a profitable one for our farmers. Late fodder crops were very light, owing to drought; many springs and wells are dry that never failed before.

BRISTOL COUNTY.

Easton (W.M. N. HOWARD). — Indian corn is more valuable than common. Turnips are light, owing to extreme drought. Farm stock is in fair condition; farmers are turning cattle into the mowings. Fall seeding is in good condition on low lands and poor on uplands. Prices for farm crops are a fair average. Sweet corn, beets and cabbages are our most profitable crops and potatoes our least profitable one. The drought is very serious, large numbers are drawing water, and many are digging new wells or digging old ones deeper.

Mansfield (E. JASPER FISHER). — The value of the corn crop will be quite a little above the normal. Root crops are hardly up to the average, owing to drought. Farm stock is in pretty good condition. Fall seeding is very backward. Prices for crops raised for market are about the same as usual. Corn and hay have been our most profitable

crops and cranberries and potatoes our least profitable ones. Considered as a whole, the season has been fairly good. The drought is very severe and rain is much needed.

Swansea (F. G. ARNOLD). — The value of Indian corn is a little above the normal. Root crops are up to the average. Farm stock is in good condition. Fall seeding is backward, as we have had six weeks of dry weather. Onions have brought good prices, but all other crops have sold lower than usual. Corn has been our most profitable crop and potatoes and late cabbage our least profitable ones. Considered as a whole, I do not think the season profitable for our farmers. Streams, springs and wells are low, but not as low as a year ago.

Acushnet (MOSES S. DOUGLAS). — The corn crop is 20 per cent above the normal in value. Root crops are more than average. Farm stock is fully up to the average in condition. Fall seeding is in good condition, the early seeded looking finely. Prices for farm crops were a little lower than formerly. Hay and corn have been our most profitable crops and potatoes our least profitable one, as they rotted quite badly and prices were low. The season has been a profitable one, owing to large crops. Springs and wells are quite dry. We had no frost until September 29th. Good showers of late have helped celery, cabbage and turnips.

PLYMOUTH COUNTY.

Norwell (HENRY A. TURNER). — The corn crop is about normal in value. Root crops have proved to be average. Farm stock is in good condition. Fall seeding is looking well. Prices for crops raised for market have been about the same as in former years. Corn and potatoes have been our most profitable crops and strawberries our least profitable one, almost a failure. This has been a pretty good season for profit. Vegetation has not seemed to suffer from drought, but wells and springs have been very low.

West Bridgewater (CLINTON P. HOWARD). — A good crop of corn has been harvested, short stover, with average corn. Root crops are giving average yields. Farm stock is looking well, all stock in the pastures having been fed corn meal as the feed dried up. Fall seeding is not in very good condition. Prices for crops raised for market are about average. Hay has been our most profitable crop and late potatoes our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Grass has nearly stopped growing because of drought; small streams have stopped running, and many springs and wells are dry.

Plympton (WINTHROP FILLEBROWN). — The corn crop is much larger than normal and of good quality. Root crops have not done as well as usual. Farm stock is in good condition. Fall seeding started well, but has made slow growth. Market crops bring about normal prices. Hay has been our most profitable crop and beets have been our least profitable one. As a whole, the season has been as profitable as usual.

for our farmers. Wells have been very low, many springs have dried up and streams are low, but vegetation has not suffered from drought as would be expected.

Lakerille (NATHANIEL G. STAPLES). — The corn crop is normal in value. Root crops are up to the average. Farm stock is in fair condition. Fall seeding is in good condition. Prices for crops raised for market are about average. Turnips have been our most profitable crop and strawberries our least profitable one. The season has been about as usual for profit for our farmers. Vegetation has suffered from drought and some streams and wells that have not been dry for many years, if ever, are now dry.

Wareham (A. B. SAVARY). — Indian corn is above the normal. Root crops are giving average crops. Farm stock is in good condition. Fall seeding is very poor, owing to dry weather. Prices for crops raised for market are about the same as usual. Hay has been our most profitable crop and cranberries our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Vegetation, except fall seeding, has not suffered from drought, but streams, springs and wells are the lowest for years.

Mattapoisett (E. C. STETSON). — Corn is fully as good as usual, if not better. Root crops are up to the average. Farm stock is in very good condition. Fall seeding is in good condition. Prices for crops grown for market have been rather better than usual. Hay has been our most profitable crop and onions our least profitable one. Considered as a whole, the season has been a profitable one for our farmers. Vegetation has suffered little from drought, but streams, springs and wells are low.

BARNSTABLE COUNTY.

Falmouth (D. R. WICKS). — Corn is a little better than the normal, both for fodder and grain. Root crops bid fair to give good yields, full up to the normal. Pastures and mowings are green as in June and farm stock is in good condition. Fall seeding is looking well. Most farm crops have brought a little higher prices than usual. Sweet corn and hay have been our most profitable crops and strawberries and all fruits and berries, except red raspberries and blackberries, have been our least profitable ones. The season has been profitable for some farmers and unprofitable for others. We have not had much drought to injure vegetation or cut short the water supply. No frost here yet.

Mashpee (W. F. HAMMOND). — The corn crop has been above the average. Root crops have been about average. Farm stock is in good condition to begin the winter. Fall seeding is looking very well. Prices on almost all crops have been above the average. Potatoes have been our most profitable crop and cranberries our least profitable one. Farmers have made a small profit this season. The drought has done no damage of any amount. Quite a number have commenced raising fowls for market.

Barnstable (JOHN BURSLEY). — The corn crop is 15 per cent above the normal in value. Root crops are up to the usual average. Farm stock is in good condition. Fall seeding is in very good condition. All farm crops have brought improved prices, except possibly potatoes and cranberries. Cranberries have been our most profitable crop. I think the season has been a profitable one for our farmers. The drought is not as severe in effect as in 1908 and 1909. Our cranberry growers are hoping for better prices for their late fruit.

Brewster (THOS. D. SEARS). — The corn crop compares favorably with past years as to value. Root crops are above the average. Farm stock is looking very well. Fall seeding is rather poor on account of dry weather. Prices for crops raised for market compare favorably with former years. Potatoes have been our most profitable crop and cranberries our least profitable one. I think the season has been quite profitable for our farmers. The drought has been very hard on vegetation, and streams, springs and wells are very low.

Dennis (JOSHUA CROWELL). — Indian corn is above the normal in value. Root crops have proved to be average. Farm stock is in good condition. Prices for crops raised for market have been about as last year. Considered as a whole, the season has been a fairly profitable one for our farmers. Perhaps the cranberry crop has been the one most disappointing in this section, owing to small crops and low prices. Springs and wells are rather low, but we have not suffered severely from drought.

Truro (JOHN B. DYER). — Corn is an average crop. Root crops are average, unless late turnips fall short, owing to the recent dry weather. Farm stock is in good condition. Fall seeding is fair on low land, but everything has suffered on dry land from drought. Prices for farm crops have been very fair, garden stuff especially. Potatoes and cabbages have been our most profitable crops. All leading crops have been fairly profitable. Fruit crops, including pears and apples, are a failure. Considered as a whole, the season has been profitable. The demand for garden vegetables by the summer people is increasing. Uplands, particularly pastures, have suffered from drought, and springs and wells have been low, but without great inconvenience.

DUKES COUNTY.

West Tisbury (GEO. HUNT LUCE). — Indian corn is above an average crop. Root crops are below the average. Farm stock is in good condition. Very little, if any, fall seeding has been done. Prices for crops raised for market are average. Hay has been our most profitable crop and potatoes our least profitable one. If our farmers have made a profit in other years this should have been a profitable one. Vegetation is dry and streams and springs very low.

BULLETIN OF MASSACHUSETTS BOARD OF AGRICULTURE.

GRAPE CULTURE.

By Mr. EDWARD R. FARRAR of Lincoln, Mass.

For the commercial growing of grapes two things are essential,—aptitude for the work and a favorable location, where the late spring or early fall frosts are not likely to destroy the crop. If either of these is lacking one will do well to give his attention to some other crop.

Cold air settles on the lower levels something as water does, this being referred to as frost drainage, so that an elevated hill slope is needed for grapes, preferably with a south or southeast exposure. If there is a body of water at the foot of the hill so much the better, as the air moving down over the water is warmed, and rises, giving a current of air which will occasionally save a crop, as it did this year on a corner of my vineyard that slopes toward a pond, the rest of the fruit being nearly all killed by the frost in June this season.

The slope and the character of the land should be such as will ripen the fruit early, as the price drops very materially when the New York or western grapes come into the market, making it difficult to dispose of our crop at a profit. Windbreaks, protecting the vineyard from the strong prevailing winds, are a help. The injury to the leaves by high winds gives favorable conditions for the entrance and growth of fungous diseases.

SOILS.

Grapes prefer a light, friable soil, and cultivation and cover crops help to keep it in this condition. Occasionally, with special care, a rocky or steep hillside may be used.

FERTILIZERS.

Fertilizers should be used that will be ample for growing the fruit, but without making undue growth of wood. Stable manure is more apt to promote fungous growth than are commercial fertilizers.

VARIETIES.

For commercial uses Moore's Early, Worden and Concord are the best varieties. An additional list would be Winchell, Campbell's Early, Diamond and Niagara.

For the home garden a selection might be made from the following varieties: Brighton, Campbell's Early, Concord, Delaware, Diamond, Herbert, Moore's Early, Niagara, Winchell and Worden.

The following brief descriptions of these varieties are compiled from Bulletin 315 of the New York Agricultural Experiment Station:—

Brighton.—Originated in New York in 1870; tendrils, continuous; self sterile; stamens, reflexed; cluster, very large to medium in size and medium to loose in compactness; berry, medium to large in size and round to oval in form; color, red; flavor, very sweet; quality, very good; season, midseason; use, for dessert and market; well recommended; of high quality, productive; earlier than Concord; a good market grape.

Campbell's Early.—Originated in Ohio in 1892; tendrils, intermittent; fertile; stamens, upright; cluster, very large to medium in size and close to medium in compactness; berry, large in size and round in form; color, purplish black; flavor, sweet and vinous; quality, good; season, early; use, dessert and market; well recommended; one of the standard commercial grapes.

Concord.—Originated in Massachusetts in 1843; tendrils, continuous and irregular; fertile; stamens, upright; cluster, large to medium in size and close; berry, about medium in size and round to oval in form; color, black; flavor, sweet and slightly foxy; quality, good; season, midseason; use, for dessert and market; well recommended; hardy and productive; the standard market grape.

Delaware.—Originated in New Jersey (?) in 1849; tendrils, intermittent; fertile; stamens, upright; cluster, medium to small in size and close; berry, small to medium in size and round in form; color, light red; flavor, vinous, spicy and sweet; quality, best; season, midseason; use, dessert, market and wine; well recommended; the standard American grape for quality.

Diamond.—Originated in New York in 1870; tendrils, intermittent; fertile; stamens, upright; cluster, medium to large in size and close; berry, about medium in size and round to oval in form; color, green to yellowish green; flavor, spicy; quality, very good; season, midseason; use, dessert, market and wine; well recommended; one of the best white grapes; worthy of more general cultivation.

Herbert.—Originated in Massachusetts in 1852; tendrils, intermittent; sterile; stamens, reflexed; cluster, medium to large in size and loose; berry, about medium in size and round in form; color, black; flavor, tart; quality, good to very good; season, midseason;

use, dessert; recommended; on account of quality, one of the best table grapes.

Moore's Early.—Originated in Massachusetts in 1871; tendrils, continuous; fertile; stamens, upright; cluster, medium in size and compactness; berry, large to medium in size and round in form; color, purplish black to black; flavor, foxy and sweet; quality, fair to good; season, early; use, dessert and market; well recommended; the standard early commercial grape.

Niagara.—Originated in New York in 1868; tendrils, continuous; fertile; stamens, upright; cluster, large to medium in size and medium in compactness; berry, about medium to large in size and oval in form; color, green to yellowish green; flavor, foxy, sweet and tart; quality, good to very good; season, midseason; use, dessert and market; well recommended; the standard white grape for the commercial grower.

Winchell.—Originated in Vermont in 1850; tendrils, irregular; fertile; stamens, upright; cluster, large to medium in size and loose to medium in compactness; berry, about medium to small in size and round in form; color, light green; flavor, juicy and sweet; quality, very good to best; season, early; use, dessert and market; well recommended; the standard early green grape.

Worden.—Originated in New York in 1863; tendrils, continuous; fertile; stamens, upright; cluster, large and close; berry, large in size and round in form; color, dark purple to black; flavor, sweet, juicy, foxy and mild; quality, good to very good; season, early midseason; use, dessert and market; well recommended; the standard early black grape for home use and market.

PLANTING.

The holes should be dug about 10 inches deep and the plants carefully set out, using either strong one-year-old plants or two-year-old plants. The vines should be purchased of one of the large, reliable firms in the grape regions of New York. The rows should be set 8 feet apart, with the vines 6 to 8 feet apart in the rows. I prefer early spring planting.

The land should be in good condition, with plenty of humus. Ground bone or some other slow-acting fertilizer may be dug in where the vines are set. For the first two years light posts, with one or two wires, may be used. After that substantial posts, with two to four wires, will be needed.

PRUNING.

The first year the vines should be cut back to two buds. These should be allowed to grow as long as they will. The next year the vines may be cut the height of the lower wire, and two shoots again be allowed to grow, breaking the others off soon after they start. The object of this severe pruning is to get a strong root system established,

not allowing too much of the vine to go into unnecessary top. The third year the best cane may be left 3 to 6 feet long, according to the strength of the vine.

To get a good crop of large clusters strong canes of well-ripened wood are needed, the fruit being grown only on the wood of the previous year's growth. To obtain such, various methods are used. Probably the best way is to have one cane on the trellis run from that vine to the next, so that when the vines are in place on the trellis there will be on one of the wires a continuous line of bearing wood, and on a wire underneath this two canes for the next year's bearing may be grown, the best one of them to be used for the next year's fruiting.

Another good method is to have two or four arms on the vines, so placed that on the second and fourth wires there will be a continuous line of bearing wood. Where this method is used a number of the poorer shoots may be broken off when young.

Another way, practiced considerably in New York, is to have the vine along the lower wire, the other shoots being grown vertically and tied to the other wires. Another way is to let the vine grow pretty much as it will, cutting away all but two or three buds on the stronger last year's shoots.

SUMMER PRUNING.

If the vines have wintered favorably a number of the smaller buds may be rubbed off soon after they start, and all those on wood more than one year old, unless wanted for next year's bearing. About the time the blossoms open, by pinching back the ends of the new growth the life of the vine is forced back into the bunches, helping them to set large clusters. The pinching back should be done so as to leave about five leaves on the cane beyond the bunch of fruit. Side shoots will start, which may be cut back two or three times during the season. The new leaves, being of a light color, are easily seen, and only the stronger growth needs cutting back.

GIRDLING.

Ringing or girdling the vine may sometimes be used to advantage. This is done by taking off the bark about an inch wide around the vine, the theory being that the sap goes up in the wood and down in the bark. By cutting the bark the sap is forced into the growth above the part girdled, and by keeping the vine cut back the fruit is usually increased in size, and ripens from a week to ten days earlier. The girdling should be done about the middle of July. The part of the vine girdled dies in the winter. Only one-half of the vine should be girdled, as about that proportion is needed to keep up the vigor of the vine. If too much of the vine is girdled the fruit does not ripen well, and the vine is weakened. I have practiced girdling more or less for fifteen years, and see no injury to my vineyard from it.

THINNING THE FRUIT.

Soon after the fruit is set the vines should be gone over, and where there are more bunches than are needed the smaller ones should be taken off, so that the fruit the vine is able to carry will be in as few bunches as possible.

SPRAYING.

For fungous diseases spraying is a preventive rather than a cure, as after the fungous diseases are well started spraying has little effect in checking them. A good spraying with a strong solution of copper sulphate, before the buds start, covering thoroughly the vines and also the posts, often helps out very much the rest of the season. By adding arsenate of lead to this spraying mixture it will help take care of the earlier insects. Just before the blossoms open a spraying of Bordeaux and arsenate of lead should be used, covering the bunches thoroughly. This repels and usually checks the work of the rose bugs. They like to eat the grape blossoms, and are one of the few insects not affected by contact or stomach poisons. Another spraying ten days later is needed, and occasionally a fourth spraying.

The chief diseases of the grape are anthraenose, black rot, downy and powdery mildew. The chief insects affecting the grape are the flea beetle, grape-fruit worm, leaf hopper and rose bug. These are usually controlled by the spraying above referred to.

MARKETING.

Grapes are usually disposed of to the best advantage by marketing as soon as they are well ripened. Moore's Early and Winchell should be disposed of as soon as suitable, as the first is liable to have the fruit shell off and the other loses tone.

The package should be such as suits the market where they are sold. I use an eight-quart diamond basket, which holds from ten to twelve pounds.

In years like the present the smaller bunches can be picked before they are quite ripe, and sold for preserving. In local markets there is often considerable call for grapes for that use.

Prices are not such as were received thirty or forty years ago, but for several years past have ranged from $2\frac{1}{2}$ to 7 cents per pound, averaging about 4 cents.

I usually begin selling in August, and my crop is generally all marketed by the 20th of September. I have had no loss from fall frosts since 1893.

There is many a sheltered nook about buildings or yard where a few vines might be grown. It is always well to keep one's family well supplied with choice fruit.

